8463632

# THE UNITED STATES OF AMERICA

## TO ALL TO WHOM THESE PRESENTS SHALL COME:

**UNITED STATES DEPARTMENT OF COMMERCE**

**United States Patent and Trademark Office**

***February 29, 2024***

**THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE RECORDS OF THIS OFFICE OF THE FILE WRAPPER AND CONTENTS OF:**

**APPLICATION NUMBER:** ***13/917,865***
**FILING DATE:** ***June 14, 2013***
**PATENT NUMBER:** ***8858534***
**ISSUE DATE:** ***October 14, 2014***

**Certified by**

Performing the Functions and Duties of the
Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office

BROWDY AND NEIMARK, P.L.L.C.
ATTORNEYS AT LAW
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ALVIN BROWDY (1917-1998)

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ALLEN C. YUN, PH.D

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E-MAIL
mail@browdyneimark.com

June 14, 2013

U.S. Patent and Trademark Office
Customer Service Window
Randolph Building, Mail Stop Patent Application
401 Dulany Street
Alexandria, VA 22314

Re: New Patent Application in U.S.
Applicant(s): Carmeli ADAHAN
Title: WOUND CLOSURE AND DRAINAGE SYSTEM
Atty's Docket: ADAHAN16A

Sir:

Attached herewith is the above-identified application for Letters Patent including:

[X] Application Data Sheet

[X] Specification (8 pages), claims (4 pages) and abstract (1 page)

[X] Two (2) Sheets of Drawings (Figures 1-2)
**[X] FORMAL** [ ] Informal

[ ] Sequence listing
[ ] Paper copy (__ pages) [ ] Computer –readable copy
[ ] A computer-readable text file containing a sequence listing in compliance with PCT Rule 13ter.2 and 37 CFR 1.821-1.825. This text file is intended to be used as the paper copy in accordance with 37 CFR 1.821(c) and the CRF of 37 CRF 1.821(e). Any sequence listing submitted as part of the application as filed is not intended to be considered as the paper copy submitted to comply with 37 CFR 1.821(c).

[X] Declaration
[X] Newly executed [ ] Copy from prior application no.

[ ] Preliminary Amendment

[ ] Information Disclosure Statement with SB/08A-B.

[X] Applicant claims small entity status. See 37 C.F.R. §1.27.

[X] Electronic payment in the amount of $810.00 is being made by credit card to cover:
[X] The filing fee calculated as follows (including any preliminary amendment for entry prior to calculation of the filing fee):

Solvetum-Exhibit 1002-0002

| APPLICATION AS FILED | | | | | FEE |
|---|---|---|---|---|---|
| [xx] Search Fee | | | | | $ 600.00 |
| [xx] Examination Fee | | | | | $ 720.00 |
| [ ] Late Declaration Filing Fee | | | | | $ 0.00 |
| Total Sheets | Extra Sheets | No. of each additional 50 or fraction thereof (round up to a whole number) | | Rate | |
| 15-100 | 0/50 | - | | x **$400.00** | - |
| CLAIMS | | NUMBER FILED | NUMBER EXTRA | RATE | |
| TOTAL CLAIMS | | 22 -20 | = 2 | x 80 | $160.00 |
| INDEPENDENT CLAIMS | | 3 - 3 | = 0 | x 420 | -- |
| [ ] Multiple Dependent Claim Presented | | | | + 780 | -- |
| TOTAL OF ABOVE CALCULATIONS | | | | | $1,480.00 |
| [xx] Reduction of 1/2 for Small Entity | | | | | <$740.00> |
| SUB-TOTAL | | | | | $740.00 |
| [ ] Plus Basic Fee (Large Entity ONLY) - $280.00 | | | | | $ |
| [xx] Plus Basic Fee (Small Entity ONLY) - $ 70.00 | | | | | $ 70.00 |
| TOTAL FILING FEE DUE | | | | | $810.00 |

[ ] Other Fees: _____.

[ ] Early Publication fee - $300.00

[ ] Other Attachments: _____.

[ ] Return Receipt Postcard (in duplicate)

The following statements are applicable:

[ ] Applicant hereby requests that this application **not** be published pursuant to 35 U.S.C. §122(a). It is certified on behalf of applicant that the invention disclosed in the application has not been and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing.

[ ] Applicant hereby requests early publication pursuant to 37 CFR 1.219. The publication fee in accordance with 37 CFR 1.18(d) is being paid herewith. The accompanying application is being submitted in full accordance with the Office electronic filing requirements. Please publish as quickly as possible.

[ ] The benefit under 35 USC §119 is claimed of the filing date of:
Application No. ____ in _____ on _____, which is hereby incorporated by reference (See MPEP §201.13, pg 200-73, of revision 2, May 2004). Applicant requests that a certified copy be procured by the PTO from the JPO according to the priority document exchange program.



Solvetum-Exhibit 1002-0003

[ ] The benefit under 35 USC §119 is claimed of the filing date of:
Application No.___ in___ on___, which is hereby incorporated by reference (See MPEP §201.13, pg 200-73, of revision 2, May 2004). A certified copy of said priority document will follow.

[ ] The present application claims the benefit of U.S. Provisional Appln. No. 60/, filed_____, the entire contents of which are hereby incorporated by reference.

[ ] A corresponding Appl. No. ___was filed in _____on _____.

[X] The present application is a [X] Continuation of prior Application No.: **see Application Data Sheet**

[ ] The present application is intended to be filed with color drawings. A petition for acceptance of color drawings and three copies of the drawings in color, along with the petition fee, are being filed on even date herewith by being hand-carried to the mailroom at the Patent and Trademark Office, identifying this application by the application number, filing date and confirmation number that are received upon electronic filing of the present application. It is intended that the color drawings and petition filed on even date herewith be considered as part of the present application as filed.

[ ] The application is (or will be) assigned to:

[X] Certain documents were previously cited or submitted to the Patent and Trademark Office in the following prior application 11/989,297, which is relied upon under 35 U.S.C. §120. Applicants identify these documents by attaching hereto a form PTO-08A-B listing these documents, and request that they be considered and made of record in accordance with 37 CFR §1.98(d). Per Section 1.98(d), copies of these documents need not be filed in the application.

[ ] Incorporation By Reference. The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied herewith, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

[X] As in the parent application 11/989,297, please associate the present application with **Customer No. 001444** and recognize only the practitioners associated therewith.

[X] Direct all correspondence to the address associated with **Customer Number 001444**, which is presently:

**BROWDY AND NEIMARK, P.L.L.C.**
**1625 K Street, N.W., Suite 1100**
**Washington, D.C. 20006-1604**
**(202) 628-5197**

Please direct all telephone calls to Browdy and Neimark at (202) 628-5197.

[X] The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayments to Deposit Account No. 02-4035:
[X] Any additional filing fees required under 37 CFR §1.16.
[X] Any patent application processing fees under 37 CFR §1.17.

[X] The Commissioner is hereby authorized to charge payment of the following fees, based on any paper filed during the pendency of this application or any CPA thereof, to effect any amendment, petition, or other action requested in said paper or credit any overpayments to Deposit Account No. 02-4035:
[X] Any patent application processing fees under 37 CFR §1.17.
[ ] The issue fee set in 37 CFR §1.18 at or before mailing the Notice of Allowance, pursuant to 37 CFR §1.311(b).
[X] Any filing fees under 37 CFR §1.16 for presentation of extra claims.

[X] If a paper is untimely filed in this or any CPA thereof by Applicant(s), the Commissioner is hereby petitioned under 37 CFR. §1.136(a) for the minimum extension of time required to



Solvetum-Exhibit 1002-0004

make said paper timely. In the event a petition for extension of time is made under the provisions of this paragraph, the Commissioner is hereby requested to charge any fee required under 37 CFR §1.17 to Deposit Account 02-4035.

[X] The Commissioner is hereby authorized to credit any overpayment of fees accompanying this paper to Deposit Account No. 02-4035.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.

By: /rlb/
Roger L. Browdy
Registration No. 25,618

RLB:jhw/mcs



Solvetum-Exhibit 1002-0005

BROWDY AND NEIMARK, P.L.L.C.
ATTORNEYS AT LAW
PATENT AND TRADEMARK CAUSES
SUITE 1100
1625 K STREET, N.W.
WASHINGTON, D.C. 20006-1604
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IVER P. COOPER
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ALVIN BROWDY (1917-1998)

PATENT AGENT
ALLEN C. YUN, PH.D

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Customer Service Window
Randolph Building, Mail Stop Patent Application
401 Dulany Street
Alexandria, VA 22314

Re: New Patent Application in U.S.
Applicant(s): Carmeli ADAHAN
Title: WOUND CLOSURE AND DRAINAGE SYSTEM
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[X] Newly executed [ ] Copy from prior application no.

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[ ] Information Disclosure Statement with SB/08A-B.

[X] Applicant claims small entity status. See 37 C.F.R. §1.27.

[X] Electronic payment in the amount of $810.00 is being made by credit card to cover:
[X] The filing fee calculated as follows (including any preliminary amendment for entry prior to calculation of the filing fee):

Solvetum-Exhibit 1002-0006

| APPLICATION AS FILED | | | | | FEE |
|---|---|---|---|---|---|
| [xx] Search Fee | | | | | $ 600.00 |
| [xx] Examination Fee | | | | | $ 720.00 |
| [ ] Late Declaration Filing Fee | | | | | $ 0.00 |
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| CLAIMS | | NUMBER FILED | NUMBER EXTRA | RATE | |
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| INDEPENDENT CLAIMS | | 3 - 3 | = 0 | x 420 | -- |
| [ ] Multiple Dependent Claim Presented | | | | + 780 | -- |
| TOTAL OF ABOVE CALCULATIONS | | | | | $1,480.00 |
| [xx] Reduction of 1/2 for Small Entity | | | | | <$740.00> |
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| [ ] Plus Basic Fee (Large Entity ONLY) - $280.00 | | | | | $ |
| [xx] Plus Basic Fee (Small Entity ONLY) - $ 70.00 | | | | | $ 70.00 |
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[ ] Other Fees: _____.

[ ] Early Publication fee - $300.00

[ ] Other Attachments: _____.

[ ] Return Receipt Postcard (in duplicate)

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[ ] Applicant hereby requests early publication pursuant to 37 CFR 1.219. The publication fee in accordance with 37 CFR 1.18(d) is being paid herewith. The accompanying application is being submitted in full accordance with the Office electronic filing requirements. Please publish as quickly as possible.

[ ] The benefit under 35 USC §119 is claimed of the filing date of:
Application No. ____ in _____ on _____, which is hereby incorporated by reference (See MPEP §201.13, pg 200-73, of revision 2, May 2004). Applicant requests that a certified copy be procured by the PTO from the JPO according to the priority document exchange program.



Solvetum-Exhibit 1002-0007

[ ] The benefit under 35 USC §119 is claimed of the filing date of:
Application No.___ in___ on___, which is hereby incorporated by reference (See MPEP §201.13, pg 200-73, of revision 2, May 2004). A certified copy of said priority document will follow.

[ ] The present application claims the benefit of U.S. Provisional Appln. No. 60/, filed_____, the entire contents of which are hereby incorporated by reference.

[ ] A corresponding Appl. No. ___was filed in _____on _____.

[X] The present application is a [X] Continuation of prior Application No.: **see Application Data Sheet**

[ ] The present application is intended to be filed with color drawings. A petition for acceptance of color drawings and three copies of the drawings in color, along with the petition fee, are being filed on even date herewith by being hand-carried to the mailroom at the Patent and Trademark Office, identifying this application by the application number, filing date and confirmation number that are received upon electronic filing of the present application. It is intended that the color drawings and petition filed on even date herewith be considered as part of the present application as filed.

[ ] The application is (or will be) assigned to:

[X] Certain documents were previously cited or submitted to the Patent and Trademark Office in the following prior application 11/989,297, which is relied upon under 35 U.S.C. §120. Applicants identify these documents by attaching hereto a form PTO-08A-B listing these documents, and request that they be considered and made of record in accordance with 37 CFR §1.98(d). Per Section 1.98(d), copies of these documents need not be filed in the application.

[ ] Incorporation By Reference. The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied herewith, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

[X] As in the parent application 11/989,297, please associate the present application with **Customer No. 001444** and recognize only the practitioners associated therewith.

[X] Direct all correspondence to the address associated with **Customer Number 001444**, which is presently:

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[X] Any patent application processing fees under 37 CFR §1.17.

[X] The Commissioner is hereby authorized to charge payment of the following fees, based on any paper filed during the pendency of this application or any CPA thereof, to effect any amendment, petition, or other action requested in said paper or credit any overpayments to Deposit Account No. 02-4035:
[X] Any patent application processing fees under 37 CFR §1.17.
[ ] The issue fee set in 37 CFR §1.18 at or before mailing the Notice of Allowance, pursuant to 37 CFR §1.311(b).
[X] Any filing fees under 37 CFR §1.16 for presentation of extra claims.

[X] If a paper is untimely filed in this or any CPA thereof by Applicant(s), the Commissioner is hereby petitioned under 37 CFR. §1.136(a) for the minimum extension of time required to



Solvetum-Exhibit 1002-0008

make said paper timely. In the event a petition for extension of time is made under the provisions of this paragraph, the Commissioner is hereby requested to charge any fee required under 37 CFR §1.17 to Deposit Account 02-4035.

[X] The Commissioner is hereby authorized to credit any overpayment of fees accompanying this paper to Deposit Account No. 02-4035.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.

By: /rlb/
Roger L. Browdy
Registration No. 25,618

RLB:jhw/mcs



Solvetum-Exhibit 1002-0009

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | ADAHAN16A |
|---|---|---|
| | Application Number | |
| Title of Invention | WOUND CLOSURE AND DRAINAGE SYSTEM | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

## Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Inventor Information:

**Inventor 1** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Carmeli | | ADAHAN | |

**Residence Information (Select One)** ○ US Residency ◉ Non US Residency ○ Active US Military Service

| City | Jerusalem | Country of Residence i | IL |
|---|---|---|---|

**Mailing Address of Inventor:**

| | | | |
|---|---|---|---|
| **Address 1** | 11 Netivei Am, Ramot | | |
| **Address 2** | | | |
| **City** | Jerusalem | **State/Province** | |
| **Postal Code** | 97552 | **Country** i | IL |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

## Correspondence Information:

**Enter either Customer Number or complete the Correspondence Information section below.**
**For further information see 37 CFR 1.33(a).**

☐ **An Address is being provided for the correspondence Information of this application.**

| | | | |
|---|---|---|---|
| **Customer Number** | 01444 | | |
| **Email Address** | mail@browdyneimark.com | Add Email | Remove Email |

## Application Information:

| | | | |
|---|---|---|---|
| **Title of the Invention** | WOUND CLOSURE AND DRAINAGE SYSTEM | | |
| **Attorney Docket Number** | ADAHAN16A | **Small Entity Status Claimed** | ☒ |
| **Application Type** | Nonprovisional | | |
| **Subject Matter** | Utility | | |
| **Total Number of Drawing Sheets (if any)** | 2 | **Suggested Figure for Publication (if any)** | |

Solvetum-Exhibit 1002-0010

PTO/AIA/14 (03-13)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | ADAHAN16A |
|---|---|---|
| | Application Number | |
| Title of Invention | WOUND CLOSURE AND DRAINAGE SYSTEM | |

## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

| Please Select One: | ◉ Customer Number | ○ US Patent Practitioner | ○ Limited Recognition (37 CFR 11.9) |
|---|---|---|---|
| Customer Number | 01444 | | |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

| Prior Application Status | Pending | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) |
| | Continuation of | 11989297 | 2008-01-24 |
| Prior Application Status | Expired | | Remove |
| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) |
| 11989297 | a 371 of international | PCT/IL2005/000784 | 2005-07-24 |

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | ADAHAN16A |
|---|---|---|
| | Application Number | |
| Title of Invention | WOUND CLOSURE AND DRAINAGE SYSTEM | |

| Application Number | Country [i] | Filing Date (YYYY-MM-DD) | Remove<br>Access Code[i] (if applicable) |
|---|---|---|---|
| | | | |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

## Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

## Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
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|---|---|---|
| | Application Number | |
| Title of Invention | WOUND CLOSURE AND DRAINAGE SYSTEM | |

**Applicant 1** Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

| ◯ Assignee | ◯ Legal Representative under 35 U.S.C. 117 | ◯ Joint Inventor |
|---|---|---|
| ◯ Person to whom the inventor is obligated to assign. | ◯ Person who shows sufficient proprietary interest | |

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. ☐

| Prefix | **Given Name** | Middle Name | **Family Name** | Suffix |
|---|---|---|---|---|
| | | | | |

**Mailing Address Information:**

| | | | |
|---|---|---|---|
| **Address 1** | | | |
| Address 2 | | | |
| **City** | | **State/Province** | |
| **Country** [i] | | Postal Code | |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Applicant Data may be generated within this form by selecting the Add button. Add

## Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

**Assignee 1**

Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).

Remove

Solvetum-Exhibit 1002-0013

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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If the Assignee is an Organization check here. ☐

| Prefix | **Given Name** | Middle Name | **Family Name** | Suffix |
|---|---|---|---|---|
| | | | | |

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| Address 2 | | | |
| **City** | | **State/Province** | |
| **Country** i | | Postal Code | |
| Phone Number | | Fax Number | |
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| **Signature** | /rlb/ | | | Date (YYYY-MM-DD) | 2013-06-14 |
|---|---|---|---|---|---|
| First Name | Roger | Last Name | Browdy | Registration Number | 25618 |

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This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | |
| Filing Date | 2013-06-13 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | ADAHAN16A |

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| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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| | Application Number | |
| | Filing Date | 2013-06-13 |
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| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

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| | Art Unit | |
| | Examiner Name | |
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| | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

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| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

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|---|---|---|
| | Application Number | |
| | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | |
| | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

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| | Application Number | |
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| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

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|---|---|---|
| | Application Number | |
| | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |

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|---|---|---|
| | Application Number | |
| | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | ADAHAN16A |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

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☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /rlb/ | Date (YYYY-MM-DD) | 2013-06-14 |
|---|---|---|---|
| Name/Print | Roger L. Browdy | Registration Number | 25,618 |

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention: WOUND CLOSURE AND DRAINAGE SYSTEM

As a below named inventor, I hereby declare that:

This declaration is directed to the application

☒ attached hereto, or

☐ United States application or PCT International Application No._____ filed on _____

The above-identified application was made by me or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I acknowledge the duty to disclose information which is material to the patentability of this application as defined in 37 CFR § 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Legal Name of Inventor

Inventor: **Carmeli ADAHAN** Date: May 8, 2013

Signature: _____

# WOUND CLOSURE AND DRAINAGE SYSTEM

## FIELD OF THE INVENTION

This invention relates generally to wound healing, and more specifically to healing of wounds by negative pressure drainage.

## BACKGROUND OF THE INVENTION

Negative pressure applied to a wound enhances drainage of fluids or exudate from the wound and promotes tissue growth and wound healing. This method of healing (known as "cupping") was exercised since the times of ancient Greek physicians until the 19th century.

WO 96/05873 describes a therapeutic apparatus for stimulating healing of wounds. The apparatus comprises a porous foamed pad which is sealed on the wound and connected by a tube to an inlet of a canister. A vacuum pump is connected to an outlet of the canister. A bacterial filter positioned over the outlet of the canister protects the vacuum pump from contamination by wound drainage fluids sucked into the canister. The pump, the canister and control circuitry are disposed in a case.

WO 97/18007 discloses a portable wound treatment apparatus using a similar arrangement of a porous pad, canister and vacuum pump. The canister and the pump are in one housing which accommodates also the control circuitry and is wearable on a harness or a belt.

US 6,648,862 describes a portable vacuum desiccator using a similar arrangement as above, the canister being formed as a cartridge containing a trapping agent (desiccator). The vacuum pump and the canister may be integrated and detachable from the pump motor and circuitry.

Current negative pressure wound drainage systems such as the ones described above suffer from the following deficiencies:

- Since the negative pressure applied to the wound area is created by pump suction, the flow into the pump is likely to contaminate the pump, or conversely, to

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require costly and complex methods of isolating the pump from the wound exudate such as antibacterial filters.

- The wound exudate is collected in a rigid canister, which must be large enough to prevent it from overflowing, and thus it is bulky and an inconvenient burden for ambulatory patients, who carry a portable system with them.

- Conventional wound drainage systems utilize an air tight seal of the wound, which is helpful in obtaining and maintaining negative pressure, but requires a pressure relief or bleed valve to produce the pressure cycling desirable to obtain accelerated wound closure, as described in WO 96/05873.

- A sealed wound dressing or enclosure, when under negative pressure, will promote migration of the exudate toward the negative pressure source, through the connecting tube, which may occlude, should the exudate coagulate.

- The need to monitor and control the negative pressure level in conventional systems requires the use of a vacuum transducer, gage or relief valve, which must be connected to the suction tube, which is subject to contamination. Cleaning, disinfecting or isolating the negative pressure monitoring or controlling device are complex, costly and un-reliable.

## SUMMARY OF THE INVENTION

It is the purpose of this invention to alleviate all the above listed deficiencies, by providing a wound drainage enclosure and vacuum system, which are impervious to contamination and easy to use.

In accordance with a first aspect of the present invention, there is provided an enclosure for draining an open wound from liquids exuded therefrom. The enclosure is attachable to the wound circumference so as to define a confined volume, and has an outlet, for example formed as a nipple, connectable by means of a tube to an inlet of a vacuum pump so that negative pressure may be created in said confined volume. One or more bleeding holes are provided in the enclosure or adjacent to its outlet such that ambient air can enter the tube and flow together with the exuded liquids when negative pressure is present. Ambient pressure may be restored in the confined volume when the vacuum pump is not operating.

The bleeding hole in the enclosure may be a calibrated orifice or other flow restrictors providing for controlled flow of ambient air into the enclosure or into its

Solvetum-Exhibit 1002-0029

outlet. For instance, a hole plugged with open cell foam or an open pore sintered metal plug, which restrict the flow, but are not susceptible to plugging as is a small orifice.

The bleeding hole renders the wound closure vented or non-airtight, as distinguishable from conventional wound closures. The flow of air from the bleeding hole in the wound closure, in response to the negative pressure created by the vacuum pump, facilitates the removal of exudate, which might otherwise coagulate, dry-up and occlude the tubing.

According to another aspect of the present invention, there is provided a method for draining an open wound from liquids exuded therefrom. The method includes:

- providing an enclosure and sealing it to the wound circumference so as to define a confined volume,

- connecting the confined volume to a vacuum pump,

- connecting a waste container for collection of drained liquids to the vacuum pump, and

- operating said vacuum pump to draw the exuded liquids from the wound.

The method is characterized in that the confined volume is connected to an inlet of the vacuum pump and the waste container is connected to an outlet of the vacuum pump such that the drained liquids flow through said vacuum pump.

The method may include employment of an enclosure with bleeding orifices so that ambient air is allowed to enter the tube and flow together with the drained exuded liquids.

Preferably, gases are separated and released from the drained exuded liquids.

According to a further aspect of the present invention, there is provided a vacuum system for practicing the above method. The vacuum system may use a totally disposable vacuum pump, together with a waste collection bag, as disclosed in WO03016719. The vacuum pump is a two-chambered diaphragm pump adapted for pumping gases and liquids and/or any combination thereof. The vacuum pump is capable of pumping air and fluid which enter its inlet port, to a waste bag attached to its outlet port. The waste bag is vented to the atmosphere, such that it collects only the fluids which enter it.

The vacuum system may be adapted to be carried by an ambulatory patient.

According with a next aspect of the present invention, there is provided a disposable assembly for draining an open wound from liquids exuded therefrom. The

Solvetum-Exhibit 1002-0030

assembly comprises an enclosure attachable to the wound circumference so as to define a confined volume, a vacuum pump unit connected to the enclosure so that negative pressure may be created in the confined volume, and a waste container connected to the vacuum pump unit. The vacuum pump unit has means for detachably attaching to a drive unit for operating the pump unit. The enclosure is connected to an inlet of the vacuum pump unit and the waste container is connected to an outlet of the vacuum pump unit, such that when the vacuum pump unit is operated the drained liquids flow therethrough.

Preferably, the pump unit and the drive unit are adapted for attaching and detaching by simple hand manipulations.

The enclosure may have bleeding holes as described above.

The vacuum pump unit is preferably a two-chambered diaphragm pump adapted for pumping gases and liquids and/or any combination thereof.

The waste container may contain a porous media adapted to soak up the drained liquids and may be in the form of a collapsible or foldable bag.

The drained liquids and air contact only the parts of the disposable assembly. The drained exuded liquids may then be disposed of together with the disposable assembly. More specifically, the pump unit is disposed of after use, together with the tubing connected to it, as well as the waste bag connected, with its content, and with the wound closure which may be connected to the pump unit via the tube.

In accordance with yet another aspect of the present invention, there is provided a vacuum system as described above where the vacuum pump has a drive unit and a control block adapted to power the drive unit so that a predetermined level of negative pressure is maintained in the confined volume. The control block has a sensor for sensing working parameters of the drive unit and means for deriving the level of negative pressure in the confined volume from these working parameters, in order to maintain said predetermined level. The sensor has no fluid connection with the confined volume.

For example, the drive unit may comprise a direct current electric motor and the sensor may sense the electric current driving the motor. The same function of negative pressure control may be accomplished by an adjustable torque limiting clutch, placed between the motor output shaft and the pump.

Solvetum-Exhibit 1002-0031

The control block may be provided with alarm means to warn the user if the predetermined level of negative pressure is not maintained.

If the vacuum pump comprises a disposable pump unit and the drive unit is detachably attachable to the pump unit, the control block with monitoring means is preferably associated with the drive unit which is non-disposable.

Thus, indirect means are provided for controlling or monitoring the level of negative pressure applied to the wound, without making any direct connection to a vacuum sensor, transducer or gage to any portion of the system, which has the negative pressure applied to it. The indirect negative pressure monitoring and control result from the need to dispose of any portion of the system, which may come in contact with the pumped media, which is likely to be contaminated or infectious. Accordingly, all the disposable components in the system may be relatively low in cost, to promote discarding them after use. Pressure transducers, vacuum gages or sensors, are relatively costly, and thus not considered disposable.

## BRIEF DESCRIPTION OF THE DRAWINGS

In order to understand the invention and to see how it may be applied, a preferred embodiment will now be described, by way of non-limiting example only, with reference to the accompanying drawings, in which:

**Fig. 1** is a schematic sectional view of the vacuum system of the present invention applied on a wound.

**Fig. 2** shows the disposable portion of the system of Fig. 1.

## DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

The present invention provides a system and a method of treating and healing of a body wound, by applying a negative pressure to the wound, over an area sufficient to promote migration of epithelial and subcutaneous tissue toward the wound.

It is appreciated that the detailed description that follows is intended only to illustrate certain preferred embodiments of the present invention. It is in no way intended to limit the scope of the invention, as set out in the claims.

With reference to Fig. 1, in accordance with the present invention, a vacuum system 10 for draining an open wound from liquids exuded therefrom comprises a wound enclosure 12, a vacuum pump 14, and waste collection bag 31. The wound

Solvetum-Exhibit 1002-0032

enclosure 12 is connected by a suction tube 16 to an inlet 11 of the vacuum pump. The waste collection bag 31 is connected to an outlet 22 of the vacuum pump. Thereby, when the vacuum pump 14 is operated, the drained liquids flow through the pump into the waste bag 31.

Suction tube 16 is connected to nipple 38 of the enclosure 12 which covers wound area of the body 34 such that suction of air through tube 16 creates negative pressure in the volume above the wound area of the body 34. A bleeding orifice 35 is provided within the enclosure 12, or adjacent to it as a tube orifice 37, allowing ambient air to flow into and through suction tube 16, rendering enclosure 12 non-air tight, or vented. This feature, unlike conventional sealed closures, provides for quick movement of exudate entering suction tube 16, toward the vacuum pump 14, and into the waste bag 31, before it dries up or coagulates and occludes the tube. This feature also provides for introduction of ambient pressure to the wound area of the body 34 whenever the vacuum pump stops pumping, allowing cyclic negative pressure application to the wound, by cycling the vacuum pump on and off alternately.

Instead of the bleeding orifice 35 in the enclosure, other flow restrictors may be used to provide for controlled flow of ambient air into the enclosure or into the outlet. For instance, a hole plugged with open cell foam or an open pore sintered metal plug, which restrict the flow, but are not susceptible to plugging as is a small orifice.

The vacuum pump 14 comprises a pump unit 18 and a drive unit 40 which are detachably attachable to each other, as explained below. The pump unit 18 includes a two-chambered housing 17 and a diaphragm 24 secured to the underside of the two-chambered housing 17 so as to form a working chamber 29.

The two-chambered housing 17 has a first chamber 13 with the inlet 11 and a second chamber 21 with an outlet 22. The suction tube 16 is connected to the inlet 11. Two one-way valves 19 and 20 are present at the bottom of the first chamber 13 and the second chamber 21, respectively. To the bottom of the two-chambered housing 17 there is attached a mounting base 23, used to mount the housing 17 to the drive unit 40 by means of a bayonet lock.

The diaphragm 24 has an integral rod-shaped drive member 25, which is used for engagement with the drive unit 40.

The drive unit 40 includes an electric motor 39, batteries 41 and a control block 50 described below. The shaft of the motor 39 has a crank 27 coupled to a reciprocating

Solvetum-Exhibit 1002-0033

rod 26. The rod 26 has a receptacle with a cavity adapted to receive and lock therein the drive member 25.

When the pump unit 18 is attached to the drive unit 40 by means of the bayonet lock in the base 23, the drive member 25 is received in the receptacle cavity of the reciprocating rod 26 and then locked therein.

Upon activation of the motor 39, the crank 27 is rotated and reciprocates the receptacle rod 26, causing the diaphragm 24 to expand and contract the working chamber 29. Thus the pump unit 18 pumps air or liquid that passes through the one-way valves 19 and 20.

Air and liquids enter the two-chambered housing 17 through the inlet 11 and suction tube 16 which is connected to the patient's wound enclosure 12, for the removal of exudate. Liquids and air enter the first chamber 13, which is under negative pressure when diaphragm 24 reciprocates, driving them past one-way valve 20, into the second chamber 21. The air and liquid which are pumped through outlet 22, enter waste bag 31.

The pump's ability to pump air and liquid, unlike conventional pumps, which are efficient in pumping only one type of matter, is enhanced by the flexibility of the diaphragm 24 which allows the diaphragm to yield when encountering heavy loads, such as those present when pumping liquid. This diaphragm flexibility also provides an additional substantial advantage: when the negative pressure in working chamber 29 is high, the diaphragm 24 stretches to allow the reciprocation of the receptacle rod 26 to occur, at minimal burden to the electric motor 39.

The waste bag 31 has a vent 15, through which air and gas are discharged to the atmosphere. Accordingly, waste bag 31 will retain only the waste fluids which are pumped into it. The waste bag may contain a porous media 47 adapted to soak up the drained liquids.

It is important to note that waste bag 31 is made of thin plastic sheet, which allow it to be folded or collapsed when not full, providing the convenience of having minimal bulk and minimal inconvenience to the patient using or carrying it.

The drive unit 40 also includes a control block 50 with control circuits such as cycle control 42, which turns the motor pump on and off alternately, motor voltage and current monitoring and control 43, which controls the negative pressure level produced by the pump unit 18, by controlling the voltage and current which drive motor 39. At any given voltage which drives motor 39, the current draw of the motor is directly

Solvetum-Exhibit 1002-0034

related to the negative pressure generated by the pump 18. Accordingly, monitoring of the current which the motor 39 draws allows for indirect monitoring of the negative pressure attained by pump 18. The ability to monitor the negative pressure developed by pump 18, indirectly, precludes the need of making an infectious negative pressure line connection to a pressure transducer or vacuum gage.

For example, if the motor 39 is a direct current electric motor, a sensor may sense the electric current driving the motor. Since the direct current motor output torque is directly related to the current driving the motor, and since the motor output torque is directly related to the negative pressure the pump 18 produces, monitoring the motor current or controlling it, provide for monitoring and controlling the negative pressure produced by the vacuum pump. Motor current monitoring is only one of the available methods of indirect negative pressure monitoring and controlling. The same function of negative pressure control may be accomplished by an adjustable torque limiting clutch placed between the motor output shaft and the crank 27.

The control block 50 also has a negative pressure comparator 44, which compares the desired set negative pressure level obtained by pump 18, and the actual monitored negative pressure level as obtained indirectly from motor voltage and current monitoring and control 43. Comparator 44 will activate audible alarm 45, whenever pump 18 fails to reach the desired pre-set negative pressure level.

**Fig. 2** shows the disposable portion of the system as an assembly 60, which includes the pump unit 18, the waste bag 31, the connecting tube 16 and the wound enclosure 12, all separated from the drive unit and from the wound area of the body 34. The assembly 60 may be disposed of in its totality after use, and replaced by a new assembly, thus keeping the costly drive unit 40 free from any contamination. It would be obvious to those skilled in the art, that the present invention alleviates the need for cleaning or disinfecting any portion of drive unit 40 after use, or providing protective means, such as filters, to keep contaminants from reaching the costly drive 40.

Solvetum-Exhibit 1002-0035

CLAIMS:

1. A vacuum system for applying negative pressure to a wound, the vacuum system comprising: an enclosure, a venting arrangement, a tube, a vacuum source, and a controller:

the enclosure being attachable to a periphery of the wound so as to define a confined volume;

the enclosure having an enclosure outlet connectable to said vacuum source via said tube so that negative pressure can be selectively created in said volume;

the venting arrangement comprising a flow restrictor to restrict flow through said venting arrangement and to thereby provide a controlled flow of ambient air into said vacuum system upstream of the vacuum source;

the controller configured for controlling operation of the vacuum source while providing venting of the vacuum system via said venting arrangement to provide a desired level of said negative pressure in said confined volume.

2. The vacuum system according to claim 1, wherein said flow restrictor is provided in any one of the enclosure or the tube.

3. The vacuum system according to claim 1, further comprising a sensor for enabling determination of a level of said negative pressure in said confined volume.

4. The vacuum system according to claim 1, further comprising a waste container in fluid communication with said vacuum source.

5. The vacuum system according to claim 1, wherein said vacuum source comprises a vacuum pump driven by a motor.

6. The vacuum system according to claim 5, wherein said motor is an electric motor, and said controller controls operation of said motor to thereby provide a desired level of said negative pressure in said confined volume.

7. The vacuum system according to claim 6, wherein said controller controls the electric current or the voltage of said motor to control said level of said negative pressure in said confined volume.

8. The vacuum system according to claim 6, wherein said controller controls the torque of said motor to control said level of said negative pressure in said confined volume.

9. The vacuum system according to claim 1, wherein ambient pressure may be restored in said confined volume via said venting arrangement when said vacuum pump is not operating.

10. The vacuum system according to claim 1, wherein said venting arrangement comprises at least one of:

- one or more bleeding holes;
- a porous body;
- an orifice.

11. A vacuum system for applying negative pressure to a wound, the vacuum system comprising: an enclosure, a venting arrangement, a tube, a vacuum source, and a controller:

the enclosure being attachable to a periphery of the wound so as to define a confined volume;

the enclosure having an enclosure outlet connectable to said vacuum source via said tube so that negative pressure can be selectively created in said volume, said venting arrangement located outside said enclosure and comprising a flow restrictor to restrict flow through said venting arrangement and to thereby provide a controlled flow of ambient air into said tube, said controlled flow of ambient air entering said tube via said venting arrangement without entering said enclosure;

the controller configured for controlling operation of the vacuum source while said tube is being vented via said venting arrangement to provide a desired level of said negative pressure in said confined volume.

12. The vacuum system according to claim 11, further comprising a sensor for enabling determination of a level of said negative pressure in said confined volume.

13. The vacuum system according to claim 11, further comprising a waste container in fluid communication with said vacuum source.

14. The vacuum system according to claim 11, wherein said vacuum source comprises a vacuum pump driven by a motor.

15. The vacuum system according to claim 14, wherein said motor is an electric motor, and said controller controls operation of said motor to thereby provide a desired level of said negative pressure in said confined volume.

16. The vacuum system according to claim 15, wherein said controller controls at least one of the electric current of said motor, or the voltage of said motor, or the torque of said motor to control said level of said negative pressure in said confined volume.

17. The vacuum system according to claim 11, wherein ambient pressure may be restored in said confined volume via said venting arrangement when said vacuum pump is not operating.

18. The vacuum system according to claim 11, wherein said venting arrangement comprises at least one of:

- one or more bleeding holes;
- a porous body;
- an orifice.

19. A method for applying negative pressure to a wound, comprising:

(a) providing a vacuum system comprising at least: an enclosure, a venting arrangement, a tube, and a vacuum source:

the enclosure being attachable to a periphery of the wound so as to define a confined volume;

the enclosure having an enclosure outlet connectable to said vacuum source via said tube so that negative pressure can be selectively created in said volume;

the venting arrangement comprising a flow restrictor to restrict flow through said venting arrangement and to thereby provide a controlled flow of ambient air into said system upstream of the vacuum source;

(b) controlling operation of the vacuum source while the vacuum system is being vented via the venting arrangement to thereby provide a desired level of said negative pressure in said confined volume.

20. The method according to claim 19, wherein the vacuum source comprises a vacuum pump driven by an electric motor, and wherein step (b) comprises controlling operation of said motor to thereby provide a desired level of said negative pressure in said confined volume.

21. The method according to claim 20, wherein step (b) comprises controlling at least one of the electric current, or the voltage, or the torque of said motor to control said level of said negative pressure in said confined volume.

22. The method according to claim 19, wherein said venting arrangement comprises at least one of:

- one or more bleeding holes;
- a porous body;
- an orifice.

**Abstract**

A vacuum system for draining an open wound from liquids exuded therefrom, comprising an enclosure sealable to the wound circumference, a vacuum pump including a disposable pump unit detachably attachable to a non-disposable drive unit, and a waste container for collection of drained liquids. The enclosure has an outlet connected by means of a tube to an inlet of the pump unit and the waste container is connected to an outlet of the pump unit, such that when the vacuum pump is operated the drained liquids flow through the vacuum pump. The enclosure has one or more bleeding holes provided therethrough or adjacent to its outlet so that ambient air may enter the tube and flow together with the drained liquids. The enclosure and the waste container are disposable so that the drained liquids contact only disposable elements and may be disposed of together with all disposable elements

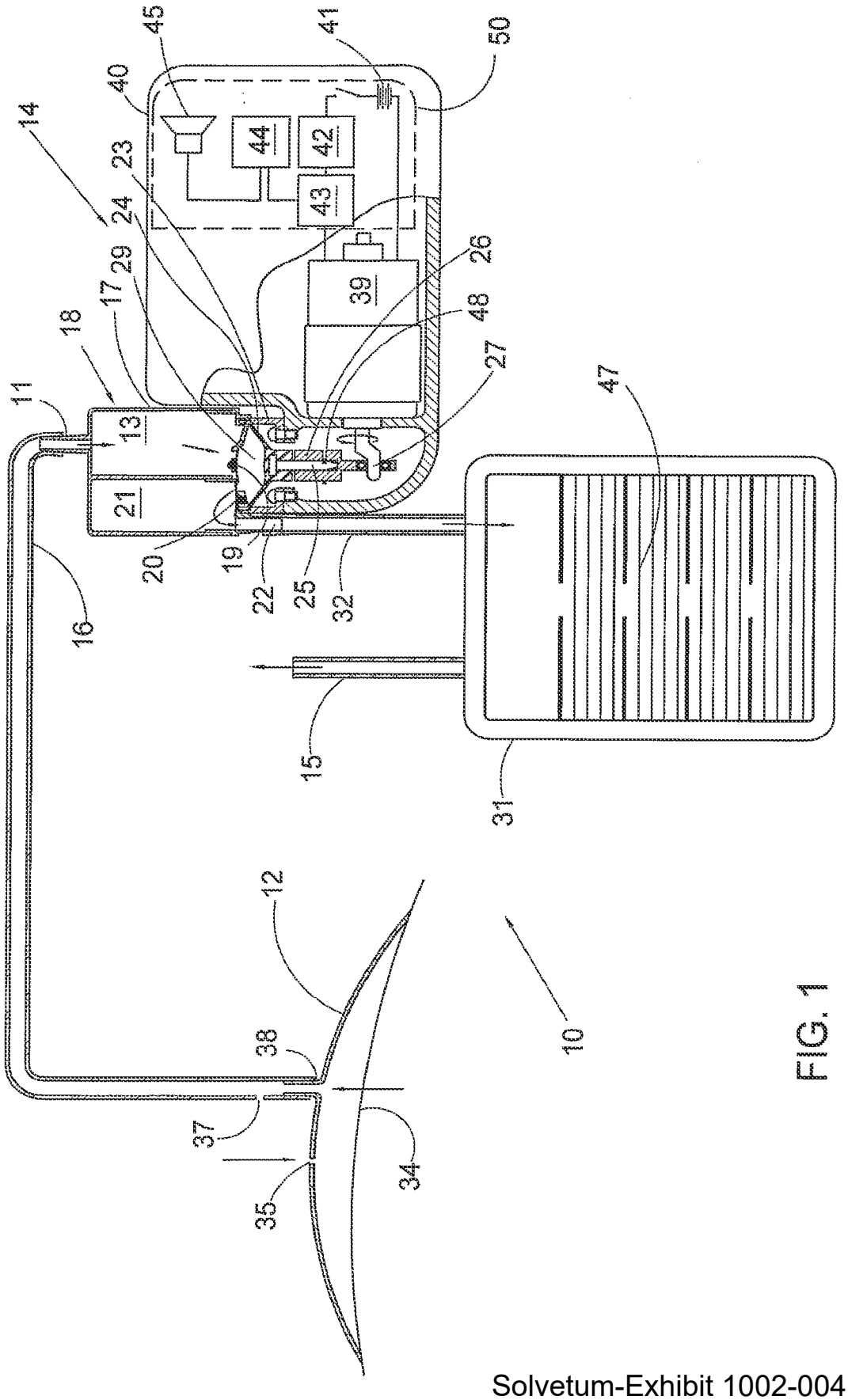



FIG. 1

Solvetum-Exhibit 1002-0041

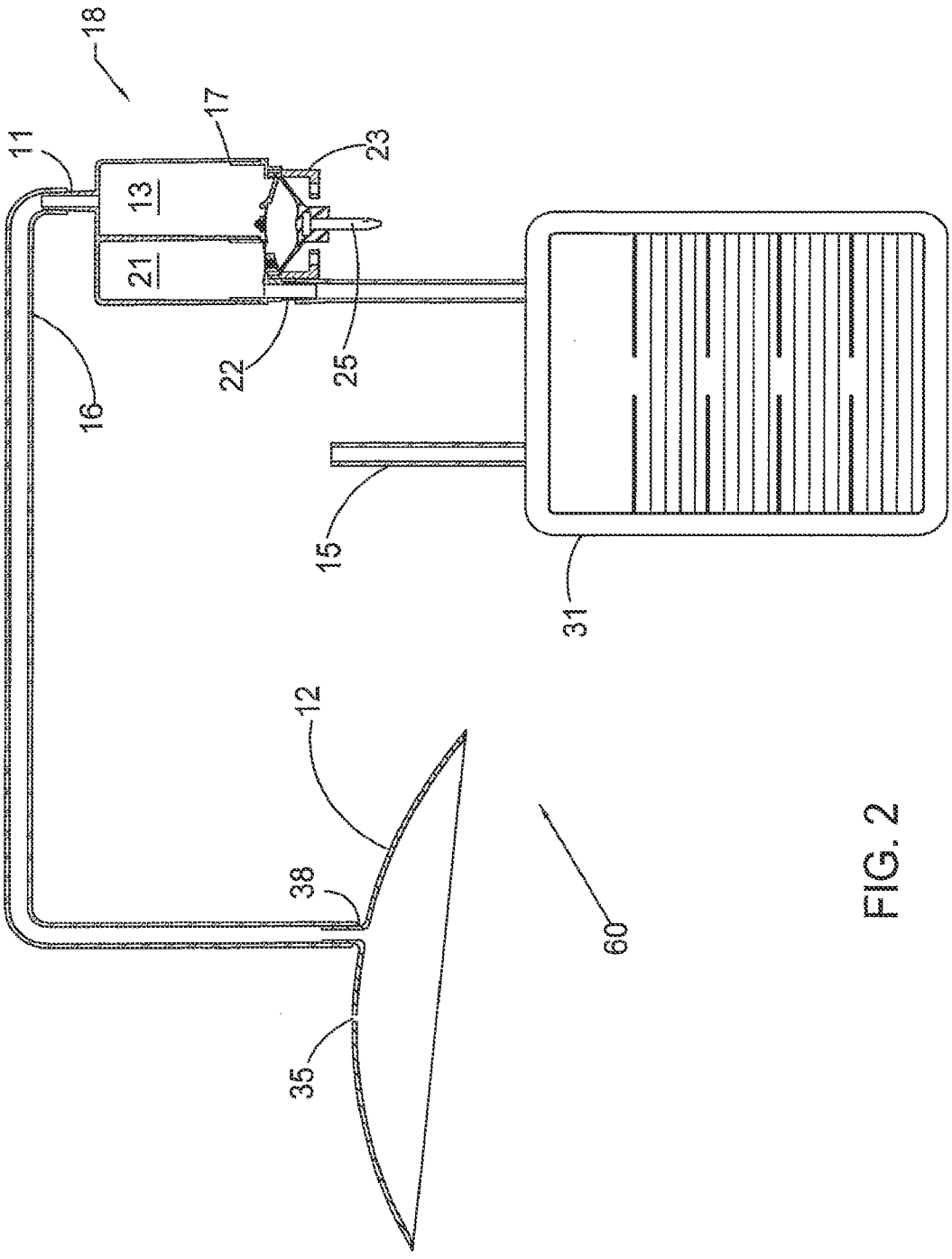



FIG. 2

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | |
| **Filing Date:** | |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Filer:** | Roger Lowen Browdy/Michael Stanwyck |
| **Attorney Docket Number:** | ADAHAN16A |

Filed as Small Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| Utility filing Fee (Electronic filing) | 4011 | 1 | 70 | 70 |
| Utility Search Fee | 2111 | 1 | 300 | 300 |
| Utility Examination Fee | 2311 | 1 | 360 | 360 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| Claims in excess of 20 | 2202 | 2 | 40 | 80 |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **810** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 16041521 |
| **Application Number:** | 13917865 |
| **International Application Number:** | |
| **Confirmation Number:** | 7555 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Customer Number:** | 1444 |
| **Filer:** | Roger Lowen Browdy/Michael Stanwyck |
| **Filer Authorized By:** | Roger Lowen Browdy |
| **Attorney Docket Number:** | ADAHAN16A |
| **Receipt Date:** | 14-JUN-2013 |
| **Filing Date:** | |
| **Time Stamp:** | 12:19:28 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $810 |
| RAM confirmation Number | 10595 |
| Deposit Account | |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

Solvetech Exhibit 1002-0045

| | | | | | |
|---|---|---|---|---|---|
| 1 | Transmittal of New Application | 2013-06-14e-filingapplicationtransmittal.pdf | 256903<br>893366f3170c48d535b2121dfadc1b0c5f3dac8f | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Application Data Sheet | 2013-06-14ADS.pdf | 1503368<br>e6f9580ab3ee862df2abc0196090f23d2b3e43a8 | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Information Disclosure Statement (IDS) Form (SB08) | 2013-06-14IDSForm.pdf | 615284<br>e66d72fd6a8cb64c61333bf9907758e963f4ab90 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Oath or Declaration filed | 2013-06-14Declaration.pdf | 41548<br>667be2e83f33a49cc69a01516c8eafd235a7ff5d | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | | 2013-06-14Application.pdf | 10823259<br>2c221fcf09de60d53b3093c5396e2c235ae028b1 | yes | 15 |

**Multipart Description/PDF files in .zip description**

| Document Description | Start | End |
|---|---|---|
| Specification | 1 | 8 |
| Claims | 9 | 12 |
| Abstract | 13 | 13 |
| Drawings-only black and white line drawings | 14 | 15 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Fee Worksheet (SB06) | fee-info.pdf | 36556<br>28cf82c10300fe9106b30fd037365fb991e66ef9 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | | **Total Files Size (in bytes):** | 13276918 | |

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

## PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/917,865

### APPLICATION AS FILED - PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY FEE($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | 70 | | N/A | |
| SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | 300 | | N/A | |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | 360 | | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | 22 minus 20 = | * 2 | x 40 = | 80 | OR | | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | 3 minus 3 = | * | x 210 = | 0.00 | | | |
| APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | 0.00 | | | |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | 0.00 | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | 810 | | TOTAL | |

### APPLICATION AS AMENDED - PART II

AMENDMENT A

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY ADDITIONAL FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

AMENDMENT B

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE($) | ADDITIONAL FEE($) | | RATE($) | ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | 3761 | 810 | ADAHAN16A | 22 | 3 |

**CONFIRMATION NO. 7555**

1444
Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

**FILING RECEIPT**

*OC000000062440502*

Date Mailed: 07/15/2013

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**Inventor(s)**

Carmeli ADAHAN, Jerusalem, ISRAEL;

**Applicant(s)**

Carmeli ADAHAN, Jerusalem, ISRAEL;

**Power of Attorney:** None

**Domestic Priority data as claimed by applicant**

This application is a CON of 11/989,297 01/24/2008
which is a 371 of PCT/IL2005/000784 07/24/2005

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/917,865**
**Projected Publication Date:** 10/24/2013
**Non-Publication Request:** No
**Early Publication Request:** No
** **SMALL ENTITY** **



Solvetum-Exhibit 1002-0049

**Title**

WOUND CLOSURE AND DRAINAGE SYSTEM

**Preliminary Class**

604

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

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| Application Number | 13917865 |
| Filing Date | 2013-06-14 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | ADAHAN16A |

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| | 1 | 2008039314 | WO | A2 | 2008-04-03 | Karpowicz et al. | | ☐ |
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| First Named Inventor | Carmeli ADAHAN |
| Art Unit | |
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Solvetum-Exhibit 1002-0053

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| Application Number | 13917865 |
| Filing Date | 2013-06-14 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | ADAHAN16A |

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| Signature | /Ronni S. Jillions/ | Date (YYYY-MM-DD) | 2013-08-12 |
| Name/Print | Ronni S. Jillions | Registration Number | 31,979 |

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(71) Applicant *(for all designated States except US)*: **BOEHRINGER LABORATORIES INC.** [US/US]; 500 E. Washington Street, P.o. Box 870, Norristown, PA 19404 (US).

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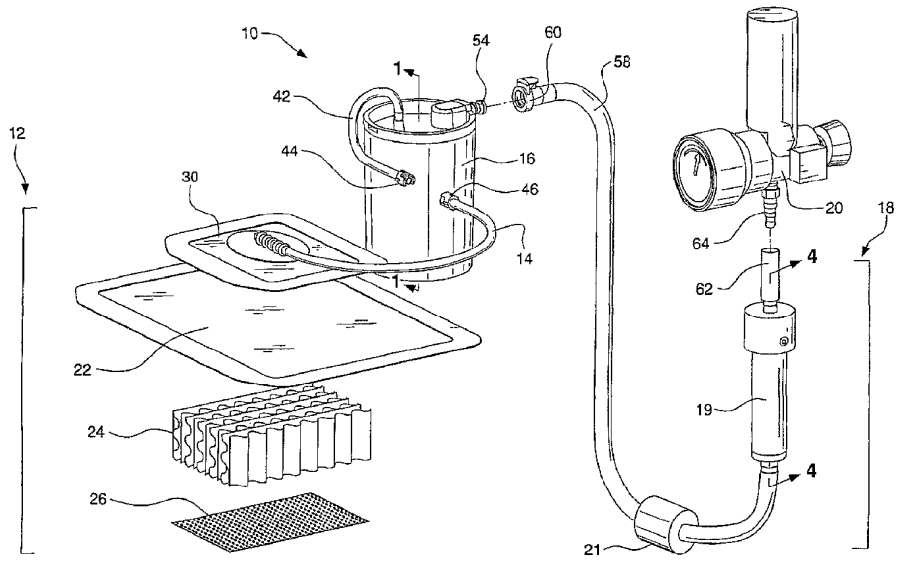
(74) Agents: **MARSHALL, John, J.** et al.; Drinker Biddle & Reath Llp, One Logan Square, 18th and Cherry Streets, Philadelphia, PA 19103-6996 (US).

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**Published:**
— *with international search report*
— *with amended claims*

(54) Title: PUMP SYSTEM FOR NEGATIVE PRESSURE WOUND THERAPY




(57) Abstract: A portable suction pump for producing negative pressure in a system for applying suction to a wound, in which the pump has a pressure control circuit for controlling the operation of the pump to maintain the pressure between upper and lower limits around a pre-selected pressure, and a fault detection system to detect deviations in the level of negative pressure applied to the wound; wherein the fault detection system can operate independent of the pressure control circuit. In a preferred embodiment, the fault detection system uses deviation from a reference airflow to detect system faults.

WO 2008/039223 A1

Solvetum-Exhibit 1002-0056

# PUMP SYSTEM FOR NEGATIVE PRESSURE WOUND THERAPY

## Reference to Related Application

[0001] This application claims priority of U.S. Provisional Patent Application No. 60/847,221, filed September 26, 2006.

## Field of the Invention

[0002] The invention is related to the general field of wound treatment, and to the more specific field of devices for wound drainage and treatment with suction.

## Background of the Invention

[0003] It is well known to treat wounds by applying suction under airtight wound covers. The suction can be used to aspirate wound exudate and other liquids from the wound and/or the wound packing materials, and the suction can be applied as a healing modality for its well known antiseptic and tissue regeneration effects.

[0004] A primary concern in using suction assisted wound therapy is maintaining consistent suction pressure at the wound. It is increasingly recognized that once suction wound dressings are applied, the suction should be maintained at certain levels. Loss of suction to the wound can result if leaks or blockages occur in the system.

[0005] Leaks can occur through breach of the airtight seals surrounding the wound. The earliest devices merely ran a tube under the edge of a wound cover and applied an adhesive or paste around the tube and cover to maintain an airtight seal. The other end of the tube was connectable to a waste collection reservoir and suction regulator of a hospital suction system, and the pressure selected at the regulator was assumed to be the approximate pressure communicated to the wound area under the cover. The test for leakage was visual observance of the cover contracting and the absence of whistling noise when negative pressure was applied. See, e.g., M. E. Chariker, et al, "Effective Management of Incisional and Cutaneous Fistulae with Closed Suction Wound Drainage", *Contemporary Surgery,* vol. 34, June 1989, pages 59-63. This initial check for an airtight seal did not, however, provide any warning if the system developed a leak or if blockage occurred in the collection circuit after hours of use.

**[0006]** The adhesive seal around the suction tube or other tubes which run under the edge of the wound cover in these prior wound dressings is vulnerable to cracking and breaching the airtight seal, creating air leakage into the cover. Improvements have been made to suction wound therapy devices to reduce the likelihood of leakage. For example, U.S. Application No. 11/181,128, filed July 14, 2005 and commonly assigned with this application, discloses a tube attachment patch to allow the suction tube to be terminated outside of the primary cover and thus reduce the risk of breaking the adhesive seal to the skin. While these newer tube attachment devices provide more seal integrity, there is still the potential for breach of the airtight seals, due to patient movement in bed for example.

**[0007]** Blockage of suction to the wound can occur for several reasons. A waste collector for wound exudate is usually positioned somewhere in the suction line between the wound and the suction source. Waste collectors incorporate shut-off mechanisms that will shut off suction to the wound when the collector is overfilled. Another potential blockage is kinking or crimping of the suction line itself. Blockage due to debris from the wound and clotting is also a concern. The suction source may also be inadvertently turned off, a line may be inadvertently clamped, or the suction regulator may be misadjusted after the dressing is applied. Since suction wound dressings are intended to last for long periods without changing, usually 24 hours or greater, a leak or blockage could develop unnoticed and not be detected for a duration sufficient to negate the beneficial healing effect of suction as well as increase the risk of infection. There are currently devices to sense when a waste collector canister is filled and provide a warning signal to empty it. None of the devices, however, provides a comprehensive and reliable monitoring of system operation, nor cover the full range of fault possibilities with leakage or blockage.

**[0008]** In their efforts to improve over these prior art devices, the present inventors designed a suction wound dressing monitoring system as described in U.S. Patent Application Serial No. 11/268,212. In so doing, they considered the impracticality of locating expensive pressure transducers in any of the system components that should be single-use disposable items due to contamination by body fluids. The designers considered that the same basic system should preferably be effective in detecting and

indicating both leaks and system blockage, and that the detection of leaks or blockage should preferably be effective regardless of where the leak or blockage occurs in the system. They considered that the system should preferably provide clear visual indication of both normal and abnormal operation, and could usefully provide aural indication and auto-recording of abnormalities. They also considered that the suction monitoring capability should be easily convertible from use with a stationary suction system, as typically found in hospital care rooms, to use with a portable suction pump.

## Summary of the Invention

**[0009]** In the present invention, the inventors further considered that when using a portable pump as the suction source it would be advantageous to use a microprocessor in the pump's flow monitoring system to detect deviation from the reference airflow and provide corresponding indicators and/or alarms. The use of a microprocessor would also enable other useful functions, such as recording and accumulating various parameters in time units and providing reports of such time records.

**[0010]** For safety and redundancy, however, the inventors considered that it would be advantageous to provide the pump with pressure control circuitry that is independent of the microprocessor controlled airflow monitoring. This would allow the pump to control pressure to an operator selected pressure set-point without needing to rely on signals from the microprocessor. However, the pressure control circuitry could provide to the microprocessor data related to pump operation, such as the detection of an open circuit, a faulty pressure transducer or a run away pump condition. Moreover, the microprocessor could be used to reset the selected pressure for the pump control circuitry, such as for intermittent operation or to create a line clearing pressure pulse if the airflow deviation was beginning to indicate a conduit occlusion.

**[0011]** The inventors also considered that it would be useful for the airflow monitoring system to be coupled to a display system on the pump for convenient indication of status conditions related to air flow, such as: normal operation, low level leak, high level leak, line occlusion and a filled waste collection canister. They also considered that it would be useful for the pump to have a separate error indicating display for convenient indication of error conditions that are not related to air flow;

such as overpressure detection by the pressure transducer, pressure transducer failure, waste collection canister not attached, low battery voltage, attachment of incorrect power supply, and low operating time remaining.

[0012] Although the waste collection canister could be located anywhere between the wound dressing and the vacuum source, the inventors considered that when using a portable pump vacuum source, it would be advantageous for the pump to provide a docking station for a waste collection canister, such that the canister can be securely attached to the pump housing. In that configuration, the pump may also include a level detector for detecting and indicating the fill status of the canister. For example, the pump may have a level sensor, such as a capacitance sensor, to detect a filled waste collection canister based upon indications other than pressure differential across a hydrophobic membrane in the canister. If so, the level detector signal may be moderated by an algorithm in the microprocessor to reduce the likelihood of false indications of a full canister caused by splashing when the pump/canister is moved.

[0013] Thus, the invention provides a system for applying suction to a wound in which a reference airflow rate is used for monitoring system operation. The basic components of a wound treatment system using suction include an airtight wound dressing, a suction conduit having one end operatively associated with the wound dressing to communicate suction to the wound, and an opposite end operatively connected with a source of suction, The invention provides a reference airflow rate (or "controlled leak") to the suction source when the system is in operation, such that deviation from the reference airflow can be monitored as an indication of a change in operation. In a preferred embodiment of the invention, a portable pump is used as the suction source. The pump has a flow rate monitoring system to monitor airflow through the conduit from a wound dressing to the pump as indicative of the level of negative pressure applied to the wound. Deviation from the reference flow rate can be used as an indication of abnormal condition such as leakage of the wound dressing or occlusion in the conduit. The flow rate monitoring system is controlled by a microprocessor, which also provides additional functions of providing status and error displays and time keeping and reporting. To compensate for variations in the set point

pressure selected at the pump, the microprocessor can have a look up table for flow rates that compensate for different selected negative pressures.

[0014] For safety and redundancy, the pump has pressure control circuitry that uses solid state electronics and a pressure transducer that can operate independently of the microprocessor and flow monitoring. A user operable pressure selector enables a user to select a negative pressure pump output within a range of negative pressure set-points; and the pressure transducer and a pressure control circuit control the operation of the pump to maintain the pressure sensed by the transducer between upper and lower limits around the selected pressure.

[0015] The microprocessor provides signals to an annunciator, preferably a bar meter that is color coded and graduated to provide a visual indication of air flow through the pump. The annunciator indicates when the airflow through the pump is within a range of the reference air flow that is associated with normal system operation and conversely indicates when a deviation from the reference airflow is associated with an abnormal operation.

[0016] The pump also includes an error indicator display for displaying a visual warning of system errors that are not associated with deviation of airflow through the pump from reference airflow, such as overpressure detection by the pressure transducer, pressure transducer failure, waste collection canister not attached, low battery voltage, attachment of incorrect power supply, and low operating time remaining. The error indicator is preferably controlled by the microprocessor.

[0017] Although the pressure control circuitry generally operates independently of the microprocessor to maintain a selected pressure, the microprocessor can be used to take over supervision of the pump in certain conditions. For example, the microprocessor can re-set the selected set point, such as between a higher and lower pressure level when intermittent pressure therapy is desired. In another example, the microprocessor can be programmed to directly turn on the pump or increase the pump speed when the deviation from reference air flow begins to indicate an occlusion to cause a pressure pulse output from the pump to clear the line between the patient and the collection canister.

[0018] The microprocessor also includes timing programming to record and accumulate the time units based upon inputs from other sensors, and a time reporting routine for providing reports of the time units that the pump is running. The reports may include a record of run-time intervals, a record of the date and duration of run-time intervals, a record of total accumulated run-time, a record of accumulated compliant run time, and a record of run time remaining on a pre-set run time period.

[0019] The system includes a waste collector, disposed in the suction line between the wound dressing and the source of suction, for collecting fluids aspirated from the wound. The preferred collector is an upright transparent plastic canister with fill level markings on the outside surface. The collection canister may also have a residual suction capacity to draw fluid through the line when the pump is shut down.

[0020] The canister may be prevented from overfilling by a hydrophobic membrane filter at the top of the canister that shuts off the airflow when the canister is full. The liquids aspirated from the wound may be turned into a gel, for ease of disposal and to prevent spilling, by a gelling agent in the disposable canister. To keep the waste in the canister level, the gelling agent is preferably provided in stacked disks. The canister has an inlet connector for the suction tube from the wound dressing, and an outlet connector for connecting to a portable pump or to a flow monitoring instrument for use with stationary or hospital wall suction. The outlet connector is preferably a proprietary (non-standard) connector that will not connect directly to the standard appliance fitting of a stationary suction system, to prevent anyone from mistakenly connecting directly to the suction system.

[0021] The pump may also provide a docking station for the waste collector, such that the collector can be securely attached to the pump housing. Preferably the waste collector is a transparent plastic canister having right circular cylinder profile and fill-level markings in a band extending along the height of the cylinder, and having a connection fitting with an O-ring seal. The pump has a docking station with a concave profile conforming to a half section of the canister to support the canister, and a releasable latch fitting adapted to receive the connection fitting of the canister.

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[0022] The pump may have a sensor proximate to the canister docking station for detecting when the level of waste in the canister exceeds a level which indicates a filled canister condition. A preferred sensor is a capacitance detector. The sensor sends a signal representing a level of waste collected in the canister to the microprocessor, which includes an algorithm to be applied to the signal to reduce the likelihood of an erroneous indication of a full canister caused by liquid sloshing inside the canister.

[0023] The pump may also have an activated charcoal air filter disposed between the releasable latch fitting and the pump's air discharge port for reducing odors from the pump. The pump may also have a desiccant with the filter. The pump may also utilize a controlled backpressure to lessen the noise inherent in the operation of the valves in a positive displacement pump, such as a leaf spring sound damper disposed over the pump outlet.

[0024] In a preferred embodiment, a calibrated vent in the suction conduit near the wound dressing establishes the reference airflow. Preferably the vent is located in the tube just outside of the wound cover. The vent may be an aperture in the tube sealed with a porous material having specific flow rate characteristics. The reference flow rate may be in a preferred range of 50-300 cc per minute. Higher flows such as 1000 cc/min are possible, but practical limitations on the capacity of the suction source as well as the magnitude of a leak in the dressing suggest that is preferable to use a flow below 1000 cc per minute.

[0025] By locating the vent in the conduit close to the wound, the reference airflow also serves to purge the conduit of fluids. The purging effect minimizes the likelihood of reflux of contaminated fluid back into the wound, and the risk of infection attendant to such reflux. Since the fluid does not reside in the conduit for an extended time, the purge effect also reduces the likelihood of blood clotting in the line. The pump system may also provide a pressure pulse generator to clear the collection line of serial slugs of fluid if a reduction in flow is detected.

[0026] The pump is preferably a portable battery-powered positive displacement pump in which flow rate is proportional to motor rpm allowing the airflow rate of the system to be indicated indirectly by the motor speed or pump speed. An algorithm may

be used to correct motor and pump speed to flow for compressibility effect. Thus a motor speed indicator or tachometer may be the preferred monitoring instrument. However, other flow rate monitoring instruments could be used, such as, but not limited to, target meters, rotometers, turbine meters, mass flow meters, differential pressure (Dp) cells and hot wire anemometers.

**[0027]** Although the term "airflow" is used herein for consistency, it should be apparent that it is not limited to the composition of ambient air. It is common in medical settings to alter the composition of airflow to a wound, such as by increased oxygen or therapeutic aerosols or other beneficial medications. The flow of any of these mixed gases or aerosol suspensions should be considered airflow for purpose of this description.

**[0028]** These and other advantages and aspects of the invention will become apparent upon reading the detailed description and drawings that follow.

## Brief Description of the Drawings

**[0029]** Figure 1 is an exploded perspective view of a system for suction wound therapy.

**[0030]** Figure 2 is a view of a suction tube attachment device showing an air vent in the suction tube to create a controlled reference airflow rate to the suction source.

**[0031]** Fig 3 is a cross-section view of the waste collection canister showing the shut off membrane and gel agents.

**[0032]** Figure 4 is a cross section view of the wound monitor airflow indicator.

**[0033]** Figure 5A is an exploded perspective view of a preferred embodiment of a system for suction wound therapy using a portable suction pump.

**[0034]** Figure 5B is a perspective view from the top front of a portable pump which may be used in the system of Figure 5A.

**[0035]** Figure 6A is a schematic diagram of positive displacement pump embodiment measuring motor speed as a surrogate of airflow.

**[0036]** Figure 6B is a schematic diagram of a positive displacement pump embodiment using a microprocessor for flow monitoring and reporting, and for other timing, control and status display functions.

**[0037]** Figure 7 is a schematic view of a target meter flow indicator alternative.

**[0038]** Figure 8 is an exploded perspective view of a portion of an alternative embodiment of a system for suction wound therapy according to the invention using a therapeutic fluid delivery to the wound.

## Detailed Description of the Invention

**[0039]** Figure 1 shows an embodiment of a system (10) for suction wound therapy as described in commonly owned U.S. Patent Application Serial No. 11/268,212. The components include a wound dressing subsystem (12), a suction tube (14), a waste collection canister (16), a flow monitor instrument (18) and a wall suction regulator (20) of a stationary suction source.

### The Wound Dressing

**[0040]** The typical wound dressing (12) includes a wound cover (22) and wound packing material (24), and may include a special wound contact layer (26). It will have a suction tube (14) running under the edge of the primary cover or through the cover, or will terminate outside of the cover and communicate with a nozzle or slot in the cover. There is a wide variety of each of these components. The wound dressing (12) shown in the drawings and described herein uses presently preferred components, but the invention is not intended to be limited to these components.

**[0041]** The primary wound cover (22) is preferably an airtight wound cover that is vapor permeable. It is preferred to use a thin film transparent commercial bandage, such as medical grade Tegaderm™ manufactured by 3M, that is impermeable to liquids but permeable to water vapor and oxygen. The term "airtight" means that the material is sufficiently occlusive to resist airflow through the cover to maintain suction under the cover while suction is being applied. There are many other thin-film commercial bandages that have similar properties. Highly impermeable materials could also be used. However, since it is beneficial in wound therapy to allow water vapor to escape

and oxygen to migrate into the wound, semi-permeable covers of film material such as Tegaderm™ are preferred. In some instances, the primary cover could also be a rigid or semi-rigid enclosure placed over the wound. The primary wound cover is generally sealed to the skin surrounding the wound with an adhesive (not shown) incorporated in the cover, and gap filler paste (not shown) may be used where needed.

**[0042]** Before the primary cover (22) is applied, the wound is generally packed with a wound packing (24). Simple gauze or foam pads can be used, or other materials commercially sold as wound packings. The presently preferred wound packing, however, is polyester fibers or comparable resilient fibers in a corrugated layer pattern configured to form a resilient compressible structure, as described in U.S. Patent Application No. 10/981,119, commonly assigned with this application.

**[0043]** The wound packing (24) may also be attached to a wound contact layer (26). The presently preferred wound contact layer (26) has a special construction that provides a wound contact surface, with depressions formed into the surface, to work in conjunction with the suction to encourage more rapid tissue regeneration, as described in U.S. Application No. 10/982,346, commonly assigned with this application. The contact surface is configured such that voids formed by the depressions remain above the wound surface in the presence of moisture, compressive forces and suction, encouraging local tissue deflection.

**[0044]** The wound dressing includes a suction tube (14) attached to the wound cover. The dressing may have other tubes (28, in Figure 2) for medication supply or wound flushing. The tube(s) may pass under the edge of the cover or through it, but a presently preferred arrangement uses a tube attachment patch (30) to allow the suction tube to be terminated outside of the primary cover and reduce the risk of breaking the adhesive seal to the skin, as described in U.S. Application No. 11/181,128, commonly assigned with this application.

**[0045]** As shown in Figure 2, the distal end of the suction tube (14) in this embodiment has a vent hole (32) that is sealed with a porous plug (34) that provides a controlled leak, or reference airflow, for the airflow monitoring devices described hereafter. It is preferable to locate the vent (32, 34) as close to the wound cover as

possible. Having the tube attachment outside of the primary cover allows the use of this controlled leak reference airflow without drying out of the wound, as might occur if the vent were under the cover near the wound. While it is feasible to place the controlled leak in the actual wound space, consideration would need to be given to avoid excessive drying of the wound tissue due to the introduced airflow. In addition, it is possible with the type of tube attachment patch (30) shown in Figure 2 and described in U.S. Application No. 11/181,128 to provide the vent as an aperture in the patch (30).

**[0046]** The reference airflow rate from the calibrated vent is used for monitoring system operation. The controlled leak rate should be low to maintain a proper suction at the wound site and a moist healing environment. Preferably the reference airflow is in the range of 50-300 cubic centimeters per minute. This flow is low enough to minimize drying and does not significantly alter the suction applied at the wound. Additionally, the flow is low enough to minimize the use of battery power where a portable pump is used as the suction source. A flow of this magnitude is readily obtained by providing a vent hole (32) in the suction tube that is sealed sterile with a porous plug (34), as described above. A suitable seal material is a porous plastic manufactured by Porex from sintered high density polyethylene. Such porous materials are routinely employed to admit air into medical fluid lines at a suitable flow while maintaining an efficient sterile filtration barrier against microbes.

**[0047]** The wound therapist applies the wound dressing (12) to the patient and attaches the system to suction. The therapist remedies leaks in the dressing by smoothing out creases or wrinkles in the wound cover and addressing gaps due to folds in the patient's anatomy. It has at times been useful to address specific areas of difficult anatomy by using a gap filling paste, as is common in ostomy care, such as coloplast. The airflow monitoring instruments described hereafter facilitate the initial dressing set up process by providing active feedback to the therapist on the integrity of the seal around the wound cover and tubes.

**The Waste Collector**

**[0048]** Since a primary function of suction therapy is to drain liquids from the wound, the system normally includes a waste collector (16) for collecting fluids aspirated from the wound. As in the embodiment shown in Figure 3, the collector (16) may be an upright plastic canister (36) with a right circular cylinder profile that may have fill level markings in a band extending along the height of the cylinder on the outside of the canister. The markings may be on a paper label adhesively glued to the canister. The canister is preferably a disposable, single-use device. The canister has a lid (38) incorporating a fitting (40) passing through the lid for the attachment of an inlet tube (42). The inlet tube (42) may be an end of the suction tube (14) leading from the wound, or be a short section of tube that terminates with a connector fitting (44) for mating with a matching connector (46) on the end of the suction tube (14).

**[0049]** Airflow and any blood or other fluid aspirated from the wound passes through the fitting (40) in the lid and into the canister (36). The liquid is retained in the canister, while the air rises and is drawn through a hydrophobic membrane (50) sealed to the inside of the lid. The membrane (50) acts as a bacteria filter, and can be used as a shut off mechanism to prevent the canister from overflowing and to prevent contamination from flowing out of the container toward the suction source.

**[0050]** The lid defines an air channel from the outlet port (52) to another connector (54) for connecting the canister to a portable pump or to a tube running to a stationary wall suction system. The second connector (54), however, is preferably a proprietary (non-standard) connector that will not connect directly to the standard appliance fitting of a stationary suction system. This is to prevent anyone from mistakenly connecting directly to the suction system without the flow monitoring instrument and pressure release features described hereafter, with the attendant risk of applying too great a suction to the wound. The mating receptacle in the portable pump configuration described hereafter is configured to receive the proprietary connector. The connector (54) includes a sealing element such as an O-ring seal. This arrangement provides that a fresh O-ring is preferably used with each disposable canister, as contrasted with other pump connectors where the sealing element is in the pump and will ultimately wear out and cause the system to fail because of leakage.

[0051] The air passage through the canister thus forms a part of a suction conduit between the wound and the suction source. In one embodiment of the system described herein, the canister (36) is prevented from overfilling by the hydrophobic membrane (50). If the canister (36) is allowed to fill high enough for the contents to contact the membrane, the membrane occludes and blocks airflow from passing through the canister. This blockage prevents suctioning more waste from the wound, and as described hereafter, the blockage of reference airflow is detected as an indication of an abnormal operating condition. In other embodiments described hereafter, the level of waste product in the canister can be detected by a capacitance sensor or other detector on the pump, and the detection used to prevent overfill.

[0052] Preferably the liquid waste sucked from the wound is turned into a gel for ease of disposal and to prevent spilling or splashing. Although the gelling agent could be provided in porous bags, it is preferred to use disks (56) of laminated fiber sheets containing a gelling agent, such as provided by Gelok International. The disks (56) are cut to fit inside of the jar and stacked on top of each other. The stacked disks cause the liquid to turn to a level surface gel in the canister.

[0053] The system may also include a filter/drier unit (21) disposed between the waste collection canister and the wound flow monitor (18). The filter element provides additional protection against contaminated particles entering the suction source, and the drier removes moisture from the air that may effect the calibration of the flow monitoring instrument.

**Use of Controlled Reference Airflow to Indicate Normal Operation**

[0054] While prior art suction dressing systems either do not monitor system operation at all, or do so less than optimally by trying to sense pressures directly, the system described herein uses a reference airflow, as may be provided by the air vent (32) described above, to indicate when the system is in normal operation, and also to detect deviation from the reference airflow as an indication of abnormal operation. Higher airflow than the reference flow indicates leakage, while lower airflow indicates blockage.

[0055] The range of flows suitable for reference flow are bound by the permeability of the wound cover on the lower end and suction limits on the upper end. When the wound cover is a semi permeable material, there will be a natural low level background airflow from air molecules passing through the cover. This permeation airflow could serve as the reference flow if the flow monitoring instrument were very sensitive. However, the permeation flow is usually too low and too erratic to be a good reference. The area of the cover and the possibility of it being obstructed by surgical drapes and fluid from the wound can cause the permeation flow to be erratic. Thus, the vent provides a larger and more stable flow rate that masks variation in the permeation flow and provides a good reference. For example, Tegaderm® bandage will allow a diffusion of water on the order of 800 grams/square meter/day, which correlates to a flow rate of about 0.5 cc/min over a square meter. Typical wound cover area would be less than a tenth of a square meter, so in approximate terms, the semi permeable material contributes 0.05 cc/min, or less than .1% of a reference flow of 50 cc/min. Thus, any variation in the background permeation flow is masked by the larger reference flow.

[0056] The indicator sub-system may be embodied in two devices as depicted and described below; a wound monitor flow instrument for use with a stationary suction source and a portable pump with a flow sensing system. Other types of flow indicating devices, such as target meters or hot wire anemometers could also be used.

**The Flow Monitor**

[0057] In the wound suction system of Figure 1, the flow rate monitor is a float meter (19) that includes a suction conduit (58) between the waste collection canister (16) and a stationary suction source. One end of the conduit includes a mating connector (60) to the proprietary connector (54) of the canister. The flow monitor (18) is preferably located at the other end of the conduit (58) and attaches directly to an appliance connection fitting (64) associated with an adjustable suction regulator (20) as commonly found on stationary suction systems.

[0058] The flow monitor (18) is designed to provide a visual indication of the flow rate through the system. Once the flow rate stabilizes at the controlled reference airflow following initial application, the maintenance of this visual indication of

reference flow is an indication of normal operation free of leaks or blockage, and hence an acceptable level of suction at the wound cover. Deviation to a higher airflow indicates leakage, and drop to lower or no airflow indicates blockage in the collection circuit.

**[0059]** Figure 4 is a cross section of the float meter (19). A standard connector (63) on the top end of the meter attaches to a short conduit (62) connectable to the appliance fitting (64) of the adjustable suction regulator (20). At the bottom end of the flow meter, a standard connector (59) is attached to the suction conduit (58). It is typical to use suction in the range of 25-200 mm Hg in wound therapy. The flow indicator incorporates a flow restrictor (66) having an orifice (67) that is calibrated to restrict suction airflow to be less than 20 liters per minute when a controlled level of suction of 100 mm Hg is applied by the suction regulator (20).

**[0060]** As shown in Figure 4, the flow indicator has progressive sections (68, 70, 72, 74) with different inside diameters, having the narrowest section (68) at the bottom and progressively larger diameters in the three additional sections (70, 72, 74) progressing to the top. The outside barrel (76) of the clear tube has graduated markings (not shown) to indicate airflow rates. A float (78) serves as an indicator of flow through the system. When there is no airflow, the float will rest in the lowest section (68). This area is color coded red to indicate a blockage condition, such as a full canister or any occlusion in the fluid path. When the flow into the meter is low, preferably between about 50 cubic centimeters per minute to 300 cubic centimeters per minute, the clearance between the float and the bottom section of the indicator is such that the flow around the float will cause the float to rise into the next section (70). Thus, normal reference airflow will cause the float to rise a discernable amount into the next section. This area of normal operation is color coded green, indicating an acceptable condition.

**[0061]** The mass of the float works in cooperation with the clearance between the outside of the float and the inside of the tube. The float responds to airflow rate and fluid density and will rise to a level where the dynamic forces are in equilibrium. Typical flow indicators for other applications have continuously increasing inner diameters. Slight changes in flow rate cause the float to chatter up and down around a

height indicative of the flow rate. The use of discrete sections of uniform diameters, but increasing in progression, as the four sections (68, 70, 72, 74) in this indicator reduces the chatter and causes the float to move upward in stages. These stages are selected for discrete flows that provide key reference information regarding the suction applied to the wound.

**[0062]** If flow through the system increases beyond an acceptable level due to a leak in the wound dressing, the clearance around the float in the normal position may no longer be adequate to allow the float to remain in this position, and the increased flow will lift the float to a higher section in the indicator where the internal diameter is stepped up. Graduated labeling (not shown) on the outside of the indicator provides a visual indication of a moderate leak condition. Additional stepped up diameter sections are provided to indicate higher leak conditions. The stepped up diameters require a significant change in flow before the float will jump from one position to a higher one. This eliminates the jumpiness that would be encountered with a continuous taper inner diameter as common in flow meters for other applications. The stepped diameter sections reduce user interpretation, thus enhancing ease of use and safety.

**[0063]** The wound monitor instrument also incorporates a safety valve (80) that limits maximum suction to guard against the accidental application of excessively high levels of suction. It is typical to use suction in the range of 25-200 mm Hg for wound drainage and therapy. Consequently, the suction limiting feature may be set to limit the suction to approximately 200 mm Hg. A suction pressure relief chamber (84) is formed between the first flow restrictor (66) and a second flow restrictor (82) having an orifice (83) the same size as the first restrictor. A resilient valve mechanism (86) in the relief chamber serves as a release against the application of high levels of suction. The valve mechanism is spring loaded to a predetermined suction setting, such as 200 mm Hg. If the suction pressure in the relief chamber exceeds the predetermined setting, the valve mechanism will open and allow vent air to be drawn from a relief port (69) into the metering orifice to prevent excess suction from being applied to the patient.

**[0064]** Protrusions (75) may be provided on the top underside of the interior of the float meter adjacent the first flow restriction orifice to prevent the float from completely blocking the orifice entry to the pressure relief chamber, thus allowing air

passage even if a major leak occurs. This allows some suction to communicate through the system even at high airflow rates. Alternatively, the protrusions could be located on the top surface of the float.

**[0065]** The wound flow monitor instrument is also protected from sources of potential contamination in the form of particulate matter, aerosols and humidity by an air filter/dryer (21) located in the conduit between the instrument and the canister. The filter/dryer unit includes a particle filter for removing airborne dust as may be encountered when the wound monitor is disconnected from the collection canister for periodic changeover. It is also anticipated that a desiccant or other means of humidity control can be placed in the filter/dryer unit as required.

**[0066]** While this system has been described in the context of a hospital wall suction system, it can also be used with suction pumps. Some medical buildings may use electrical power pumps to provide suction for wound therapy. These can be moved, since the only restriction is the location of electrical outlets and the length of the power cord, but they are not truly portable. A system using portable battery powered pump is described below.

**Portable Pump**

**[0067]** In a portable pump embodiment (100) of the suction system as shown in Figures 5A, the suction source is a portable suction pump unit (102) instead of a stationary suction source. The pump connects to the same wound dressing subassembly (12) and waste collection canister (16) as were described above.

**[0068]** The pump (102) operates with low voltage DC and has an onboard (battery) power source. The pump will also run on wall power with a suitable ac/dc power converter, which may be combined with a battery charger to recharge the battery during use.

**[0069]** The pump is configured to produce controlled levels of negative pressure. As shown in Fig. 5B, the pump has an On/Off/Intermittent control switch (112) and pressure level selector dial (113) on its top panel. The pump power is turned ON using the control switch (112). A prescribed pressure setting is selected on the pressure selector dial, which allows set-point choices between 30 and 75 mm Hg.

**[0070]** In the schematic diagram of Figure 6A, the portable pump embodiment includes a positive displacement air pump (103), a variable speed DC motor (104), a tachometer (105), pressure control circuitry (106) and a fault detection/alarm system (108). In this embodiment the pump pressure control circuitry and the fault detection/alarm system may be hard wired solid state electric devices.

**[0071]** In the schematic diagram of a preferred embodiment in Figure 6B, the fault detection and alarm system includes a microprocessor (200). A suitable processor is a Microchip 16 Series, part number 16F688, although other similar programmable logic devices could be used.

**The Independent Pressure Control System**

**[0072]** Regardless of whether the pump uses a microprocessor or not, the pump's pressure control system is independent of the air flow monitoring function. The pressure control system functions similar to a standard compressor circuit. A pressure transducer (not shown) monitors the negative pressure produced at the pump, and is preferably located in the conduit between the waste collection canister (16) and the pump (102). The compressor control circuit (106) includes a solid state logic device. The user selects a pressure setting using the selector dial (113) to change the resistance of a variable resistor and produce an electrical signal representing the selected pressure. The control circuit (106) receives the selected pressure setting as an input, and sets an upper and lower limit of pressure that is related to the selected pressure. This range between upper and lower limits is selected to provide a reasonably stable suction level while minimizing the on-off cycling of the pump motor. A range of approximately 10 mm Hg is preferred for patient comfort and to minimize noise. The control circuit (106) will function to maintain the pressure sensed by the transducer between the two limits. Such control circuits are commonly employed in industrial applications as well as in hospital central suction systems.

**[0073]** When the pump is initially turned on by the On/Off/Intermittent switch (112), the control circuit (106) starts the pump running until the transducer detects pressure at or exceeding the upper limit of the pressure range set by the control circuit. The pressure control circuit (106) has a comparator (not shown) that is continually comparing the pressure signal from the pressure transducer to the set point limit signals

as chosen by the operator via the pressure selector dial (113). Once the upper limit is reached, the pressure control circuit (106) turns the pump Off. Normal reference air flow in the conduit will cause pressure at the transducer to decay towards the lower limit of the control range. Once the detected pressure has reached the lower control limit, the control circuit (106) will turn the pump back On, and the process is repeated. Thus, the pressure transducer senses the current negative pressure and the control circuit (106) turns the pump On and Off accordingly to maintain negative pressures that are within the selected desired range.

**[0074]** The motor (104) is preferably a variable speed DC brushless motor, however other styles of DC motors are acceptable, as well as AC motors that can be equipped with variable outputs. With the variable speed motor, the speed is controlled via a pulse width modulation (PWM) feature of the control circuit (106). The variable speed control allows for efficient use of DC power.

**[0075]** The positive displacement pump (102) in the preferred embodiment uses a DC diaphragm style pump with inlet and outlet check valves. The diaphragm pump crankshaft is operationally connected to the shaft of the variable speed motor. Other positive displacement pumps may be used, such as peristaltic, piston, syringe or rocking piston pumps.

**[0076]** A tachometer (105) can be used to indicate motor or pump shaft rpm. For example, Hall sensors are commonly employed on DC brushless motors, as well as encoders, to indicate rpm. It is also possible to sense back EMF in brush versions of DC motors to determine motor shaft rotation speed. In an AC pump, an oscillating bar with a magnet mounted to an end is excited by an AC coil, thus driving a diaphragm. In that case a count of the oscillations delivered by the coil can be used as an indicator of pump speed. Each of these and other forms of pump or motor speed sensors is included in the generic term tachometer, and can be used as the flow rate monitoring instrument, where pump speed or displacement is measured as a surrogate for direct airflow measurement with a positive displacement pump.

**[0077]** As described above, the pressure control circuitry (106) will run the pump as necessary to maintain suction sensed by the transducer within the desired range of

the selected negative pressure set point. The pump's On-time duration is increased or decreased as required by the pump control circuitry (106), at an efficient motor speed as determined by the pulse width modulation feature of the control circuitry, to maintain the negative pressure in the range established by the selected set point. Thus, the pressure control circuit operates on sensed pressure, and not on sensed air flow. This allows the pressure control to be independent of the flow detection and monitoring and flow status display capability of the system.

**The Flow Detection System**

**[0078]** As shown in Fig 6A, a fault detection system (108) can be a circuit that is adapted to monitor pump activity as an indicator of the flow rate of air through the wound therapy and waste collection lines, coupled with an annunciator (114) to provide audible and visual indication of status of operation. This fault detection circuit (108) is a separate circuit that is independent of the compressor control (106). Preferably the fault detection system includes sensors of pump motor activity that provide input to a microprocessor which determines a flow rate based upon the motor activity input, identifies deviations from reference flow rate, and provides the annunciator signal identifying abnormal status of operation. In a preferred embodiment as described below, the fault detection circuit can include a microprocessor.

**[0079]** A preferred embodiment of portable pump unit (200) is depicted in the schematic diagram of Fig 6B. The pump (203) is as described above, a diaphragm style positive displacement pump with inlet and outlet check valves, and is powered by a variable speed brushless DC motor (204). The unit can be powered by wall outlet power with a power cord (205) supplying electrical power through a power converter and battery charger module (207) which also contains a 12 volt battery. The unit can receive DC power either from the converter or from the battery when used un-plugged. The pressure control circuitry (206) operates as described above to maintain pressure selected at the selector dial (213).

**[0080]** The unit also includes a microprocessor (210) that is involved in the flow monitoring and system status detection functions. In this embodiment, motor or pump revolutions are counted as an indication of the air volume that has passed through the positive displacement pump and provide an input to the microprocessor (210). A

discrimination algorithm in the microprocessor programming takes the count of motor revolutions and determines a flow rate. This flow rate is compared to the known reference flow rate to determine fault conditions. The flow rate is converted into a signal that illuminates a display bar on the flow rate annunciator (214). A flow rate that is less than the reference flow is indicated as abnormal operation on the annunciator as an occlusion in the circuit, most commonly a full canister. A flow rate that is comparable to the reference flow rate produces an annunciator indication of normal operation. Flow rates that are higher than the reference flow rate will produce abnormal annunciator indications that the circuit is leaking to alert the caregiver to address the seal of the wound cover.

**[0081]** Where the pump is independently turned On and Off by the pressure control circuit to maintain set point pressure, the pressure sensed by the transducer will oscillate between the upper and lower control limits. The period of this oscillation is related to the leakage in the wound dressing. The higher the leakage, the shorter the period. Thus, the time intervals between the pump turning On or Off could be detected by the microprocessor and used as a rough measure of air flow rate. Where the motor speed is also controlled via a pulse width modulation (PWM) control to make the use of DC power more efficient, however, the microprocessor can also correlate the On/Off intervals with pulse rate to determine airflow rate. In normal operation, the positive displacement pump will output a given number of pulses for each revolution of the pump. The pulse signals can be supplied as an input to the microprocessor. These pulse signals are used to determine the number of pumping strokes the pump has output and are a very close approximation of pump volume. The flow monitoring programming in the microprocessor continually counts the pulses being output from the pump to represent volume of air flow. When taken in combination with a time measurement, these pulses per unit time represent airflow rate. In a presently preferred embodiment, the time measurement is based on the Off cycles of the pump motor. From the time the pump turns Off, until the next time the pump turns Off, the microprocessor counts the pulses and divides by the time between each motor OFF condition to determine the flow rate in the conduit.

**[0082]** It is sometimes desirable to provide suction in an intermittent fashion to benefit the healing process. Prior processes involve allowing the system to vent to atmospheric pressure for a period of time to allow for reperfusion of tissue. Allowing the system to completely vent to atmosphere results in the complete loss of suction on the dressing system and any benefit that suction could play in maintaining an air tight seal around the wound. The present invention solves this problem by varying the suction between two distinct levels; a first level selected by the pressure selection dial (113) and a second level of 20-25 mm Hg. The selected higher level is used to apply the beneficial therapeutic effects of suction. The second reduced level is below capillary bed pressure, so reperfusion of tissues will occur in this lower stage, while the wound dressing maintains at least some level of suction to help keep the dressing seals in place and to maintain the reference airflow and prevent reflux and clotting in the lines. With this type of intermittent pump operation, the reference airflow should be selected such that it is maintained even at the reduced level, or else the alarms associated with low airflow should be disarmed by the microprocessor during reduced suction intervals as well as the ramp-up and ramp-down intervals.

**[0083]** The microprocessor (210) can rest the selected pressure to cause intermittent suction. When the On/Off/Intermittent switch is set to Intermittent mode, the programming in the microprocesor uses a time interval for switching between normal selected pressure and the lower level. To enter the lower pressure cycle of the intermittent mode, the microcontroller activates a transistor that adds a resistance to the compressor comparator circuit. In effect, the microcontroller has re-set the pressure control circuitry to a lower selected pressure. Thus, while the microprocessor does not directly control the pressure control system, the microprocessor can re-set the selected pressures between the higher and lower levels at timing intervals selected by input to the microprocessor.

**[0084]** Faults in the suction therapy system are detected as deviations from the expected flow through the system. The flow detection system uses the reference airflow produced by the calibrated vent on the end of the suction tube calibrated to approximately 50 - 100 cc/min to provide a flow signal indicative of normal operation. If the flow detection system determines the pump is not running at a normal duration to

maintain set-point negative pressure, it will alert the caregiver via a visual and audible alarm.

**[0085]** An increase in the On time of the motor is proportional to increase of air flow in the system. The microprocessor uses an algorithm to correct the airflow based on the actual pressure in the circuit. Any leak in the dressing system will be compensated for by an increase in the On time of the pump. As the On time increases to equate to a flow of approximately 3 liters per minute, an indicator will light on the flow annunciator display (214) of the unit to alert the caregiver to the fact that the dressing system has a leak. If the caregiver is able to correct the leaking dressing, the indicator will turn off. If the fault condition is not addressed (by re-sealing the wound site) within a one-minute timeframe, the microprocessor will activate an audible alert. Even when a leak condition exists, however, the pump will continue to run under the control of the pressure control system, delivering some level of suction until the condition is corrected or the pump is turned off.

**[0086]** The flow detection system will also sense the loss or drop of the reference airflow. There are a number of fault conditions which will cause the reference air flow to be reduced, including the lines to the waste canister becoming clogged with wound exudates, or being crimped shut by bending or squeezing. These conditions also result in the loss of negative pressure at the wound. This reduced reference air flow results in reduced motor on time that is sensed by the flow detection system and causes a visual indicator to indicate blockage condition.

**[0087]** The pump may also have an onboard compliance monitor as part of the timing function of the microprocessor. A compliance indication (159) alerts the caregiver to deviations from the normal application of suction to the wound over time and is a useful adjunct to the application of negative pressure wound therapy. The compliance monitor may compute the number of hours that suction has been within ±5 mmHg of a set point. Medical experience has shown that suction should be applied for 22 of any 24 continuous hours to be effective. This readout can be presented a number of ways to show the number or percentage of compliant hours of suction therapy.

**Waste Collection Canister and Fill Indicator**

**[0088]** The pump unit (102) also includes a docking station (160) for the waste collector located between the wound dressing and the pump for collecting liquids aspirated from the wound. As presently preferred, the waste collector is a transparent plastic canister (16) having right circular cylinder profile and fill-level markings in a band (170) extending along the height of the cylinder, and having a connection fitting (54) with an O-ring seal. The portable pump docking station (160) supports the canister. The docking station has a concave profile conforming to a half section of the canister and a semi-circular base (162) to support the canister when one is docked. The pump has a releasable latch fitting (164) in the middle of its upper wall that is adapted to receive the connection fitting (54) of the canister. The canister fitting is inserted into the latch fitting (164) and locked in place by the latch. The canister may be released and removed by depressing the canister release button portion (166) of the latch.

**[0089]** The pump also provides the ability to detect a filled canister without the need to measure differential pressures across a membrane. Differential pressure measurement can be problematic in that partially clogged membranes can lead to erroneous readings and interpretations. In this embodiment, the pump (102) employs positive level detection as a direct indication of the fill status of the canister. The pump may include a level detector sensor (218 in FIG 6B) proximate to the canister docking station for detecting when the level of waste in the canister exceeds a level which indicates a filled canister condition. A level sensor can take many forms, including a capacitance detector such as a Model# BC 10-QF5 sensor manufactured by Turck, Inc. This detector can be positioned in the pump housing at a desired level and has the ability to read a change in capacitance as caused by the presence of an ionic fluid. The detector can sense this changed environment through the pump housing, so there are no exposed elements. Capacitance type detection is also tolerant to conditions such as mist or fogging. Other positive level sensing mechanisms can be used such as optical, ultrasonic, contact wire, float systems and the like.

**[0090]** Since the patients may be mobile or need to be transported, there is a potential that agitation and motion can create an artifact where fluid may splash and create a false positive indication of a filled canister and subsequently trigger an

unwarranted signal or alarm. A software algorithm may be used by the microprocessor to minimize the likelihood of this false indication. The algorithm incorporates a time delay and a sampling rate. A sampling rate of 10 milliseconds and a delay of 4 seconds is an effective set of parameters that reduces false full indications due to a motion artifact. Preferably the algorithm is programmed into the microprocessor pump control.

**[0091]** The direct level detector also allows the system to distinguish between a filled canister and an occluded condition caused by other blockage in the conduit that is detected by deviation from reference airflow. The direct level sensor provides a signal that can illuminate a different array of visual and audible alarms than a lower than normal air flow indication. Providing the clinician a distinction between canister filled condition and an occlusion simplifies operation and makes the system easier to use and less prone to user error.

**Timing Subsystem**

**[0092]** The pump unit may have a timing subsystem for recording and accumulating time units corresponding to periods of time when the pump is running. Preferably the timing subsystem uses programming in the microprocessor (210) to record and accumulate the time units based upon inputs from other sensors. For example, the timing can be started and stopped by signals from the ON/OFF/Intermittent power switch, or signals that can detect when the pump is running from a tachometer or other sensor. The timing subsystem or programming in the microprocessor preferably also includes a time reporting routine for providing reports of the time units that the pump is running. The time reports may include a record of run-time intervals, a record of the date and duration of run-time intervals, a record of total accumulated run-time, a record of accumulated compliant run time, and a record of run time remaining on a pre-set run time period.

**[0093]** The timing subsystem may also be tied into alarms which indicate abnormal operating condition due to leak or occlusion. This will allow the timing subsystem to detect and record total pump operation time and compliant operation time. Compliant operation my be defined by therapeutic convention. For example, compliant time is sometimes identified as normal suction application for 22 hrs of a 24 hour period. The

time reporting subsystem may produce reports of complaint operation time in addition to pump run-time.

**[0094]** The timing subsystem may also be used to indicate time remaining to scheduled maintenance or cleaning, or to indicate time used or remaining on a billing plan where the payments for usage are based upon time units either on return or pre-paid in advance. When the pump is sold or leased in this manner, the timing subsystem has the ability to record and accumulate time units corresponding to periods of time when the pump is running and for providing reports of run-time, including compliant run time when the wound treatment system is operating normally.

**Status Indicators and Alarms**

**[0095]** The system status annunciator may be in the form of a bar meter (114) color coded and graduated to provide a visual indication that the flow through the pump is within a range required to maintain the reference airflow when the system is in normal operation; and conversely indicate that the pump is running faster than required to maintain the reference airflow, indicating air leakage in the system, or is running slower than required to maintain the reference airflow, indicating air blockage in the system. The pump may also provide an audible indication of abnormal operation, such as a beeper tone.

**Error Detection and Display**

**[0096]** The pump may also have warning or caution lights (116, 118, 120) indicating pump operating parameters, or errors other than those that are detected from reference airflow such as low battery charge. Electronic controls provide the ability to enable numerous combinations of visual and audible indications of flow detection faults and other errors. In the microprocessor embodiment of Fig 6B, a visual error indicator display (216) that is separate from the flow rate annunciator (214) provides additional trouble shooting assistance. These errors are detected by signals from sensors to the microprocessor. The microprocessor in turn sends signals as an alphanumeric display to the error display (214) that correlate to the following errors: overpressure, missing canister, transducer failure, low battery, low operating time remaining, and attachment of incorrect power supply.

[0097] Overpressure is the condition where a runaway pump could cause potentially high pressures to be delivered to the patient. The microprocessor's error detection software continually polls the output of the pressure transducer and compares it to a stored maximum allowable pressure. If the maximum allowable pressure is exceeded for a predetermined time period, then the microprocessor shuts the pump down and an Overpressure error is indicated on the error display.

[0098] A missing canister condition occurs if the pump is activated without a waste collection canister connected to the fitting. This condition can occur at start-up, and is detected by the error detection software as air flow through the system exceeding a certain level without a corresponding minimal increase in pressure. The detection flow rate for missing canister is typically set to be greater than the increased flow that would be expected from a wound dressing that was removed or compromised. When so detected, a Missing Canister error is indicated on the error display.

[0099] A pressure transducer failure can take two forms: an open circuit (no pressure reading) or an excessively high reading indicative of high vacuum. The latter is straightforward since it would be interpreted as an Overpressure (described above) and result in a fail-safe deactivation of the pump. The open circuit failure appears as zero pressure output. Therefore, if the error detection system software detects air flow but zero pressure, a Transducer Failure error is indicated on the error display.

[0100] A low battery charge is determined by the error detection software polling the battery output voltage when the pump is not plugged into an external electrical source. When a threshold low voltage level is crossed, a Low Battery error is indicated on the error display.

[0101] Low operating time remaining is associated with the timing feature of the pump when it is used to indicate time remaining until scheduled maintenance service or time remaining on a pre-paid rental plan. The timing system constantly accumulates run time and time remaining to a target time, such as the number of pre-paid hours. The error detection system can be set to a time remaining threshold, such that when the accumulated time indicates that time remaining has dropped below the threshold, a Low Time error is indicated on the error display.

[0102] Incorrect power supply detection is to guard against providing excessive voltage to the system. This is accomplished by comparing the input voltage to a set maximum level and detecting if voltage exceeds the maximum level. The system software detects the excess voltage and shuts down the pump, and an Incorrect Power error is indicated on the error display.

**Collection Line Pulse System**

[0103] The collection line pulse feature is intended to ensure that the collection line is maintained as clear as practical to minimize the amount of fluid in the line and ensure accurate delivery of the negative pressure. When the deviation from reference air flow begins to indicate an occlusion, the microprocessor motor controller can re-set the selected pressure to a higher level, which causes the pressure control circuitry to start the pump or increases pump speed. This pump activation causes a pressure pulse of transient high negative pressure output from the pump to clear the line between the patient and the collection canister. The microprocessor is programmed such that the pressure pulse is initiated prior to the illumination of an occlusion indication. The occlusion indication will not illuminate if the pressure pulse is followed by decay in the pressure reading on the pressure transducer. Decay in the pressure reading is indicative of a clearing collection line and therefore eliminates the concern of occlusion.

**Safety Elements**

[0104] System redundancy and therefore enhanced safety is accomplished by making the pressure control system operate independently of the monitoring and error detecting software. The pressure transducer is employed in a conventional compressor circuit to control the level of applied negative pressure. Should the compressor circuit fail, then the software has the ability to shut down the system and should the software fail, the independent pressure control will provide controlled suction to the patient.

[0105] The pump may have a charcoal filter element for controlling odors that may emanate from the patient through the pump. This element is placed on the outlet of the pump and can be readily changed and replaced. Also, desiccants can be used in conjunction with the filter to minimize moisture in the exhaust from the pump.

**[0106]** Positive displacement pumps typically employ check valves which make noise. The pump employs a backpressure device in the form of a leaf spring that is placed over the outlet of the pump to reduce the noise emanating from the pump.

**Target Meter Alternative**

**[0107]** There are other devices for determining the flow through the system that could be employed as leak detection devices in a wound dressing system operating with a reference airflow. These devices measure airflow directly, and thus can be used with non positive displacement pumps and wall vacuum sources as well as with positive displacement pumps. As shown in Figure 7, a target meter (120) is a reliable device for flow detection that is insensitive to changes in pressure. The target meter (120) employs an inlet orifice (122) and a target (124) typically placed in close proximity to the orifice. The target is attached to a shaft (126) and pivots on points (128) or an armature. A light torsion spring (not shown) may be used to keep the target in close proximity to the orifice. The extension of the shaft is placed outside of the flow path. As airflow enters the orifice, the target is forced away from the orifice. A proximity sensor, such as a reed switch (130) is so placed as to detect the positions of a magnet (132) on the end of the shaft extension and thus the presence or absence of flow in the circuit as well as measuring flow rate. A target meter could be placed between the waste collection canister and the pump or at the outlet of the pump, or between the waste collection canister and a stationary suction source to provide analogous flow rate information as previously described.

**Flow Measurement Alternatives**

**[0108]** Other flow detection devices that could be used alone or in conjunction with a suction source include a hot wire anemometer that determines flow as a function of the cooling of a wire in a flowing air stream, a rotameter with an optical detector that senses the position of a float, a turbine meter that rotates when flow is applied. These flow detection systems are generally insensitive to changes in pressure. A hot wire anemometer could be placed between the waste collection canister and the pump or at the inlet of the pump, or between the waste collector and or a stationary suction source. These alternative flow sensors allow the use of other styles of pumps that are not positive displacement, such as vane pumps and scroll pumps. Almost any flow

instrument could be used, including, for example, differential pressure (DP) cells that provide an indirect measure of flow rate.

**[0109]** When any fault condition is determined within the system, the pump will continue to run, delivering a sub-optimal level of suction, until the condition is corrected or the user powers the system off, since a sub-optimum level of suction applied to the wound is preferable to no suction at all.

**Therapeutic Fluid Delivery and Reference Flow**

**[0110]** In the embodiments described above, the reference flow for discerning between normal and abnormal operation has been ambient air supplied to the suction conduit through a vent. A reference airflow could be provided, however, in the form of a therapeutic mixture, such as oxygen enriched air, nitric oxide, heated humidified air or an aerosol containing medication droplets or particles. Such a configuration is shown in Figure 8. A source of therapeutic mixture (115), such as an oxygen regulator or a nebulizer, is connected to a conduit (117) leading to the wound. The mixture is conveyed through the conduit under or through the wound cover (152) and released into the wound packing (154) adjacent the wound contact material (156). Part of this mixture will be absorbed, but enough could be returned through the suction conduit (157) to provide a reference airflow when the flow has settled into equilibrium.

**[0111]** While the airflow monitor could be associated with a portable pump or in front of the appliance fitting of a suction regulator, as described above, an airflow monitor (119) could be provided between the therapeutic mixture source (115) and the wound cover (122). Since the part of the conduit beneath the cover would be contaminated in use, a detachable disposable tube (121) would be used for the section of conduit from the monitor to the wound packing. Thus, the invention can provide for the maintenance of suction therapy on a wound as well as the ability to monitor the application and removal of therapeutic substances to the wound.

**[0112]** Although the invention has been described and illustrated with respect to several embodiments described above, it should be understood the invention may be embodied in other forms without departing from its scope or attributes. Hence, the

scope of the invention should be derived from the claims that follow, recognizing that the claim language may literally encompass structure not specifically described.

**Claims:**

We claim.

1. A portable suction pump for producing negative pressure in a system for applying suction to a wound, the pump comprising;

(a) a flow rate monitoring system to monitor airflow through a conduit from a wound dressing to the pump as indicative of the level of negative pressure applied to the wound and to detect deviation from a reference flow rate, such that the deviation from the reference flow can be used as an indication of abnormal condition such as leakage of the wound dressing or occlusion in the conduit;

(b) a user operable pressure selector to enable a user to select a negative pressure pump output within a range of negative pressures; and

(c) a pressure transducer and a pressure control circuit for controlling the operation of the pump to maintain the pressure sensed by the transducer between upper and lower limits around the selected pressure, wherein the pressure control circuit can operate to control operation of the pump without input from the flow rate monitoring system.

2. A pump as in claim 1, wherein the flow rate monitoring system is controlled by a microprocessor.

3. A pump as in claim 2, wherein the pressure control circuit uses solid state electronic devices that can control the operation of the pump reference without input from the microprocessor.

4. A pump as in claim 2, further comprising:

a waste collector canister located in the conduit between the wound dressing and the pump for collecting liquids aspirated from the wound, the canister having a connection fitting; and

the pump having a docking station to support the canister and a fitting adapted to receive the connection fitting of the canister.

5. A pump as in claim 4, wherein the pump fitting includes a releasable latch.

6. A pump as in claim 4, further including a canister-fill sensor in the pump proximate to the canister docking station for detecting when the level of waste in the canister exceeds a level which indicates a filled canister condition.

7. A pump as in claim 6, wherein the canister-fill sensor is a capacitance detector.

8. A pump as in claim 6, wherein the canister-fill sensor provides to the microprocessor a signal representing a level of waste collected in the canister and the microprocessor includes an algorithm to be applied to the signal to reduce the likelihood of an erroneous indication of a full canister.

9. A pump as in claim 4, wherein the microprocessor provides signals to an annunciator for displaying a visual indication of airflow through the pump.

10. A pump as in claim 9, wherein the annunciator is a bar meter that is color coded and graduated to provide a visual indication of air flow through the pump.

11. A pump as in claim 10, wherein the annunciator indicates when the airflow through the pump is within a range of the reference air flow that is associated with normal system operation and conversely indicates when a deviation from the reference airflow is associated with an abnormal operation.

12. A pump as in claim 11, further including an error indicator display for displaying a visual warning of one or more system errors that are not associated with deviation of airflow through the pump from reference airflow.

13. A pump as in claim 12, wherein the system errors are chosen from the group consisting of: overpressure detection by the pressure transducer, pressure transducer failure, waste collection canister not attached, low battery voltage, attachment of incorrect power supply, and low operating time remaining.

14. A pump as in claim 2, further comprising the microprocessor having programming to reset the selected pressure between a higher and lower pressure level when intermittent pressure therapy is desired.

15. A pump as in claim 14, wherein the microprocessor has programming to increase the selected pressure when the deviation from reference air flow begins to indicate an occlusion to cause the pressure control circuit to start the pump or increases pump speed to cause a pressure pulse output from the pump to clear the line between the patient and the collection canister.

16. A pump as in claim 15, wherein the microprocessor is programmed such that the pressure pulse is initiated prior to the illumination of the occlusion indicator, and the occlusion indicator will not illuminate if the pressure pulse is followed by decay in the pressure reading on the pressure transducer.

17. A pump as in claim 2, wherein the microprocessor includes timing programming to record and accumulate the time units based upon inputs from other sensors.

18. A pump as in claim 17, wherein the timing programming also has a time reporting routine for providing reports of the time units that the pump is running.

19. A pump as in claim 18, wherein the reports include one or more reports chosen from the group consisting of: a record of run-time intervals, a record of the date and duration of run-time intervals, a record of total accumulated run-time, a record of accumulated compliant run time, and a record of run time remaining on a pre-set run time period.

20. A system for applying suction to a wound, comprising;

(a) a wound dressing, including a wound cover that is sealable to skin surrounding a wound;

(b) a conduit having one end operatively associated with the wound dressing to communicate suction to the wound, and an opposite end operatively associated with a suction pump;

(c) a transparent plastic waste collector canister located in the conduit between the wound and the pump for collecting liquids aspirated from the wound, the canister having right circular cylinder profile and fill-level markings in a band extending along the height of the cylinder, and having a connection fitting with an O-ring seal; and

(d) the pump being a portable pump having a docking station to support the canister, wherein the docking station has a concave profile conforming to a half section of the canister and a releasable latch fitting adapted to receive the connection fitting of the canister.

21. A system as in claim 20, further including a sensor in the pump proximate to the canister docking station for detecting when the level of waste in the canister exceeds a level which indicates a filled canister condition.

22. A system as in claim 21, wherein the sensor is a capacitance detector.

23. A system as in claim 21, further including the pump having a microprocessor, and the sensor providing to the microprocessor a signal representing a level of waste collected in the canister, and the microprocessor including an algorithm to be applied to the signal to reduce the likelihood of an erroneous indication of a full canister caused by liquid sloshing inside the canister.

24. A system as in claim 23, further including the pump having a charcoal air filter disposed between the releasable latch fitting and an air discharge port from the pump.

25. A system as in claim 23, further including the pump having a leaf spring sound damper disposed between the releasable latch fitting and an air discharge port from the pump.

26. A portable suction pump for producing negative pressure in a system for applying suction to a wound, the pump comprising;

(a) a pressure control circuit for controlling the operation of the pump to maintain the pressure between upper and lower limits around a pre-selected pressure, and;

(b) a fault detection system to detect deviations in the level of negative pressure applied to the wound; wherein the fault detection system can operate independent of the pressure control circuit.

27. A portable suction pump as in claim 26, wherein the fault detection system includes a flow rate monitoring system to monitor airflow through a conduit from a wound dressing to the pump as indicative of the level of negative pressure applied to the wound and to detect deviation from a reference flow rate, such that the deviation from the reference flow can be used as an indication of abnormal condition such as leakage of the wound dressing or occlusion in the conduit.

28. A portable suction pump as in claim 27, where the degree of abnormality is indicated by a color coded display.

29. A portable suction pump as in claim 26, further including a microprocessor programmed to increase the pump pressure when the deviation from reference air flow begins to indicate an occlusion by starting the pump or increasing pump speed to cause a pressure pulse output from the pump to clear the line between the patient and the collection canister.

30. A portable suction pump as in claim 30, wherein the pump has a visual occlusion indicator and microprocessor is programmed such that the pressure pulse is initiated prior to the illumination of the occlusion indicator, and the occlusion indicator will not illuminate if the pressure pulse is followed by decay in the pressure reading on the pressure transducer.

**AMENDED CLAIMS**
**received by the International Bureau on**
**November 30, 2007 (30.11.07)**

## CLAIMS

We claim:

1. A portable suction pump for producing negative pressure in a system for applying suction to a wound, the pump comprising;

(a) a flow rate monitoring system to measure airflow through a conduit from a wound dressing to the pump, the flow rate monitoring system detecting whether the airflow is within a reference flow rate range, below the reference flow rate range, or above the reference flow rate range;

(b) a visual indicator to indicate occlusion when the airflow is below the reference flow rate range, normal operation when the airflow is within the reference flow rate range, and leakage when the airflow is above the reference flow rate range; and

(c) a pressure control circuit for controlling the operation of the pump to maintain the pressure sensed by a pressure transducer at the pump inlet between upper and lower limits around a pressure setpoint.

2. A pump as in claim 1, wherein the flow rate monitoring system and the visual indicator are controlled by a microprocessor.

3. A pump as in claim 2, wherein the pressure control circuit uses solid state electronic devices that control the operation of the pump without input from the microprocessor.

4. A pump as in claim 2, further comprising:

a waste collector canister located in the conduit between the wound dressing and the pump for collecting liquids aspirated from the wound, the canister having a connection fitting; and

the pump having a docking station to support the canister and a fitting adapted to receive the connection fitting of the canister.



Solvetum-Exhibit 1002-0093

5. A pump as in claim 4, wherein the pump fitting includes a releasable latch to mechanically restrain the canister.

6. (Canceled)

7. (Canceled)

8. A pump as in claim 4, wherein the canister-fill sensor provides to the microprocessor a signal representing a level of waste collected in the canister and the microprocessor includes an algorithm incorporating a time delay and sampling rate of the sensor signal to reduce the likelihood of an erroneous indication of a full canister.

9. A pump as in claim 1,

wherein when the airflow is above the reference flow rate range, the flow rate monitoring system further detects whether the airflow is within a first range above the reference flow rate range or within a second range above the reference flow rate range, the second range being a greater deviation than the first range from the reference flow rate; and

wherein the indicator further indicates a first level leak when the airflow is within the first range above the reference flow rate range and a second level leak when the airflow is within the second range above the reference flow rate range.

10. A pump as in claim 9, wherein the indicator comprises a bar meter that is color coded and graduated to provide a graphical visual indication of the status of airflow through the pump.

11. (Canceled)


Solvetum-Exhibit 1002-0094

12. A pump as in claim 9, further including an error indicator display for displaying a visual warning of one or more system errors that are not associated with deviation of airflow through the pump from reference flow rate range.

13. A pump as in claim 12, wherein the system errors are chosen from the group consisting of: overpressure detection by the pressure transducer, pressure transducer failure, waste collection canister not attached, low battery voltage, attachment of incorrect power supply, and low operating time remaining.

14. A pump as in claim 2, the microprocessor having programming to vary the pressure setpoint on a regular time interval between a user-selected level and a second non-zero pressure level lower than the user-selected level when intermittent pressure therapy is desired.

15. A pump as in claim 14, the microprocessor further having programming to increase the pressure setpoint to a higher suction level when the airflow begins to deviate below the reference air flow causinga suction pressure pulse for the purpose of clearing the line between the patient and the collection canister.

16. A pump as in claim 15, wherein the pressure pulse is initiated prior to the visual indicator indicating occlusion, and wherein the visual indicator will not indicate occlusion if the pressure pulse is followed by decay in the pressure sensed by the pressure transducer.

17. A pump as in claim 2, wherein the microprocessor includes timing programming to record and accumulate time units of compliant run time during which the airflow is within the reference flow rate range, the compliant run time being indicative of the time during which adequate suction is delivered to the wound for medically effective treatment.


Solvetum-Exhibit 1002-0095

18. A pump as in claim 17, wherein the timing programming also has a time reporting routine for providing reports of the recorded time units.

19. A pump as in claim 18, wherein the reports include a record of accumulated compliant run time.

20. A system for applying suction to a wound, comprising:

(a) a wound dressing, including a wound cover that is sealable to skin surrounding a wound; and

(b) a portable suction pump comprising:

(i) a pressure control circuit to control the pump to maintain a suction pressure setpoint at the pump inlet;

(ii) a flow rate monitor to measure airflow through a conduit, the conduit having one end operatively associated with the wound dressing to communicate suction to the wound and an opposite end operatively associated with the suction pump, the flow rate monitor detecting whether the airflow is below, approximately at, or above a reference flow rate;

(iii) a visual indicator to indicate occlusion when the measured airflow is below the reference flow rate, normal operation when the measured airflow is approximately at the reference flow rate, and leakage when the measured airflow is above the reference flow rate;

(iv) a waste collector canister located in the conduit between the wound and the pump for collecting liquids aspirated from the wound; and

(v) a docking station to support the canister, wherein the docking station has a releasable latch fitting adapted to receive the connection fitting of the canister.


Solvetum-Exhibit 1002-0096

21. A system as in claim 20, further including a sensor in the pump proximate to the canister docking station for detecting when the level of waste in the canister exceeds a level which indicates a filled canister condition.

22. A system as in claim 21, wherein the sensor is a capacitance detector.

23. A system as in claim 21, further including the pump having a microprocessor, and the sensor providing to the microprocessor a signal representing a level of waste collected in the canister, and the microprocessor including an algorithm to be applied to the signal to reduce the likelihood of an erroneous indication of a full canister caused by liquid sloshing inside the canister.

24. A system as in claim 23, further including the pump having a charcoal air filter disposed between the releasable latch fitting and an air discharge port from the pump.

25. A system as in claim 23, further including the pump having a leaf spring sound damper disposed between the releasable latch fitting and an air discharge port from the pump to increase the pump backpressure.

26. A portable suction pump for producing negative pressure in a system for applying suction to a wound, the pump comprising:

(a) a pressure control circuit for controlling the operation of the pump to maintain the pump inlet pressure between upper and lower limits around a pre-selected pressure; and

(b) a fault detection system to detect deviations in the level of negative pressure applied to the wound by measuring the airflow rate through the pump and determining whether the airflow is below a reference flow rate range, within the reference


Solvetum-Exhibit 1002-0097

flow rate range, or above the reference flow rate range; wherein the fault detection system operates independently from the pressure control circuit.

27. A portable suction pump as in claim 26, further comprising a graphical visual indicator to indicate the status of the airflow rate.

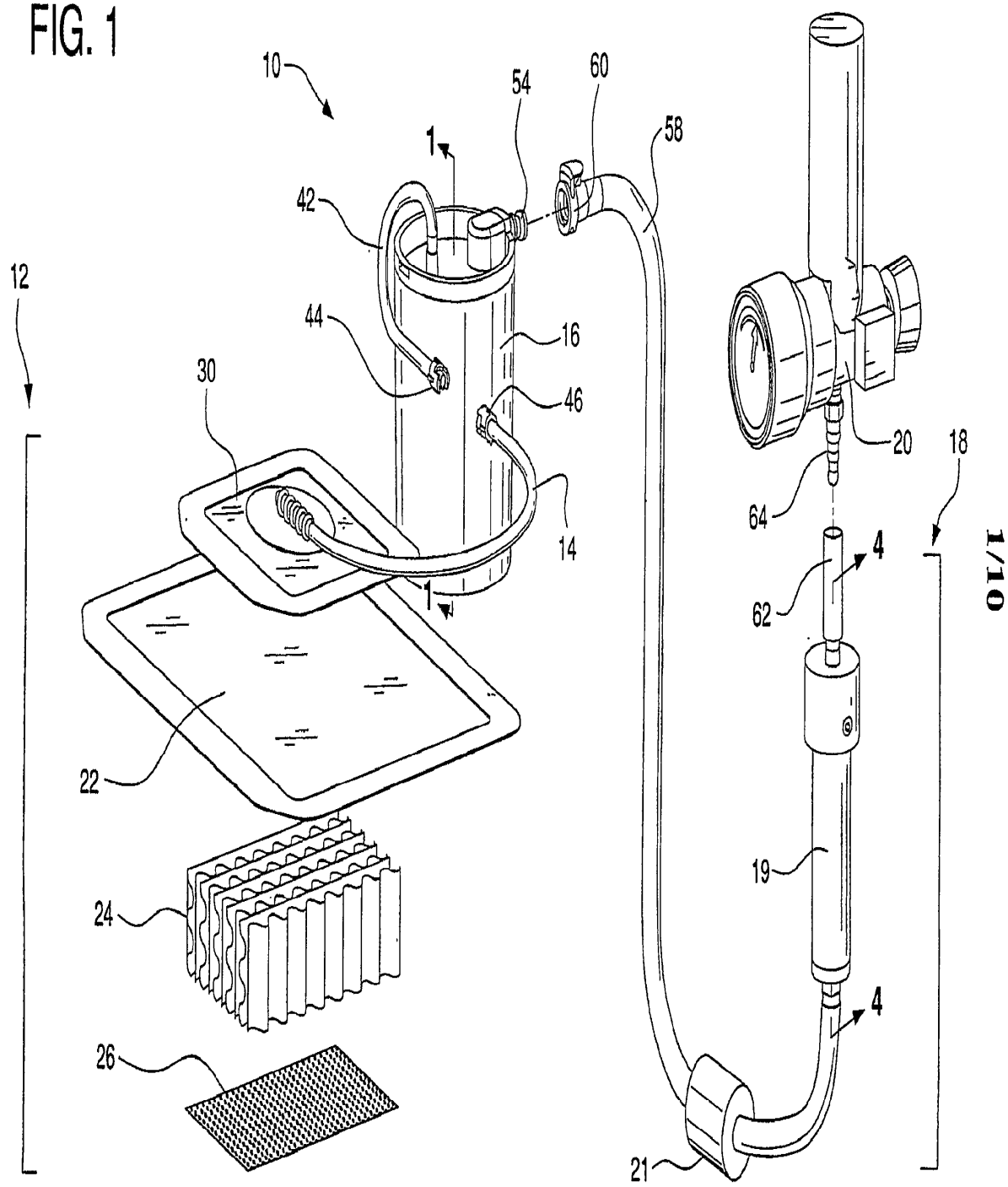
28. A portable suction pump as in claim 27, wherein the visual indicator comprises a color coded display that indicates an occlusion by a first color, normal operation by a second color, and a leak by a third color.

29. A portable suction pump as in claim 26, the pressure controller causing the pump to deliver a suction pressure greater than the pre-selected pressure when the fault detection system detects a flow rate below the reference flow rate range.

30. A portable suction pump as in claim 30, wherein the pump has a visual occlusion indicator and microprocessor is programmed such that the pressure pulse is initiated prior to the illumination of the occlusion indicator, and the occlusion indicator will not illuminate if the pressure pulse is followed by decay in the pump suction pressure.


Solvetum-Exhibit 1002-0098

FIG. 1








Solvetum-Exhibit 1002-0099

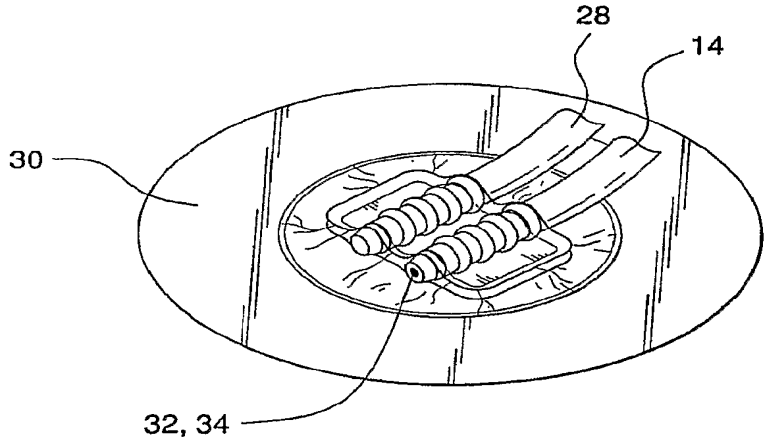



FIG. 2

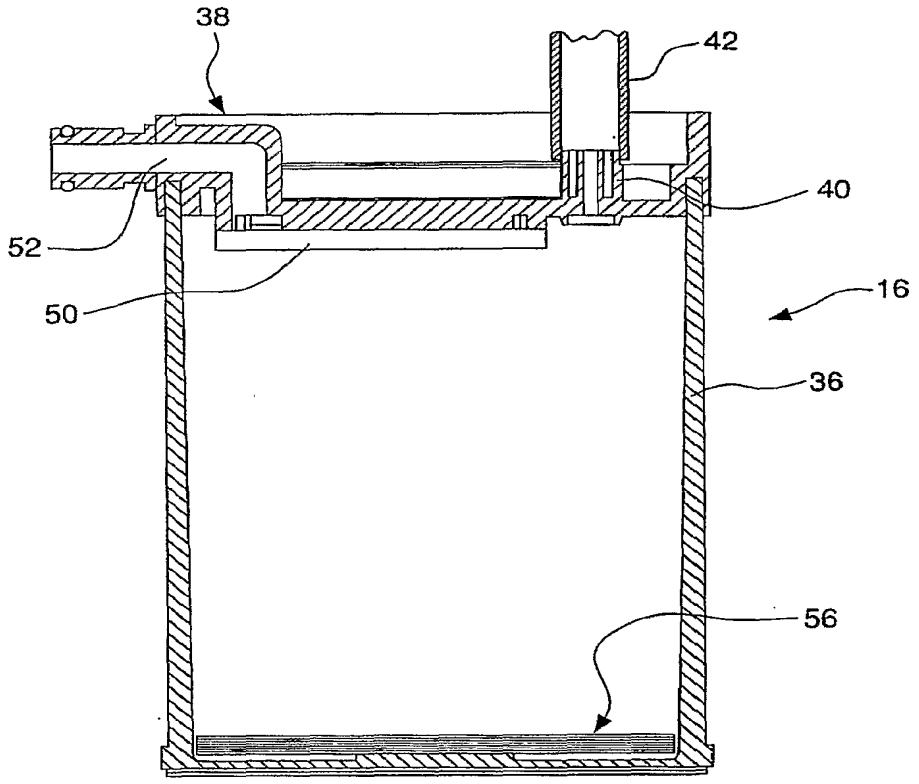



FIG. 3

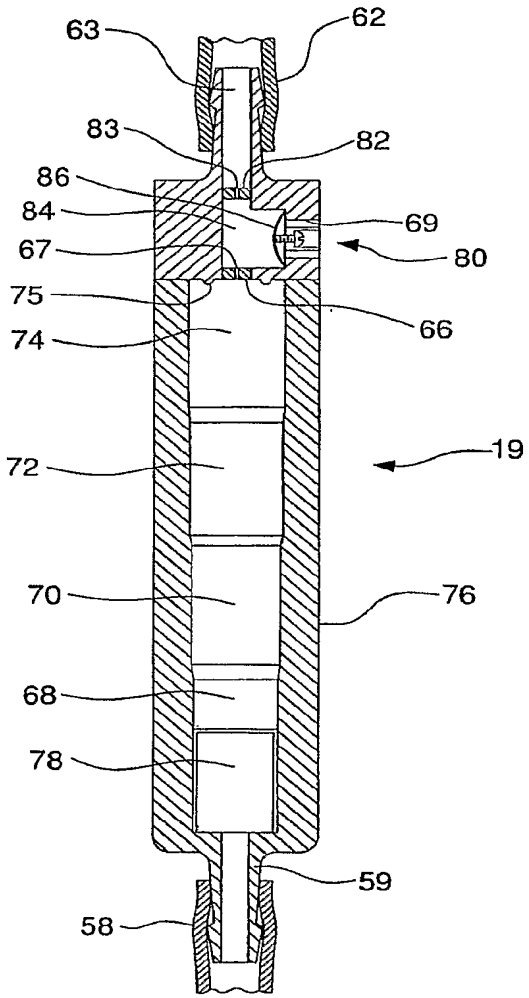



FIG. 4

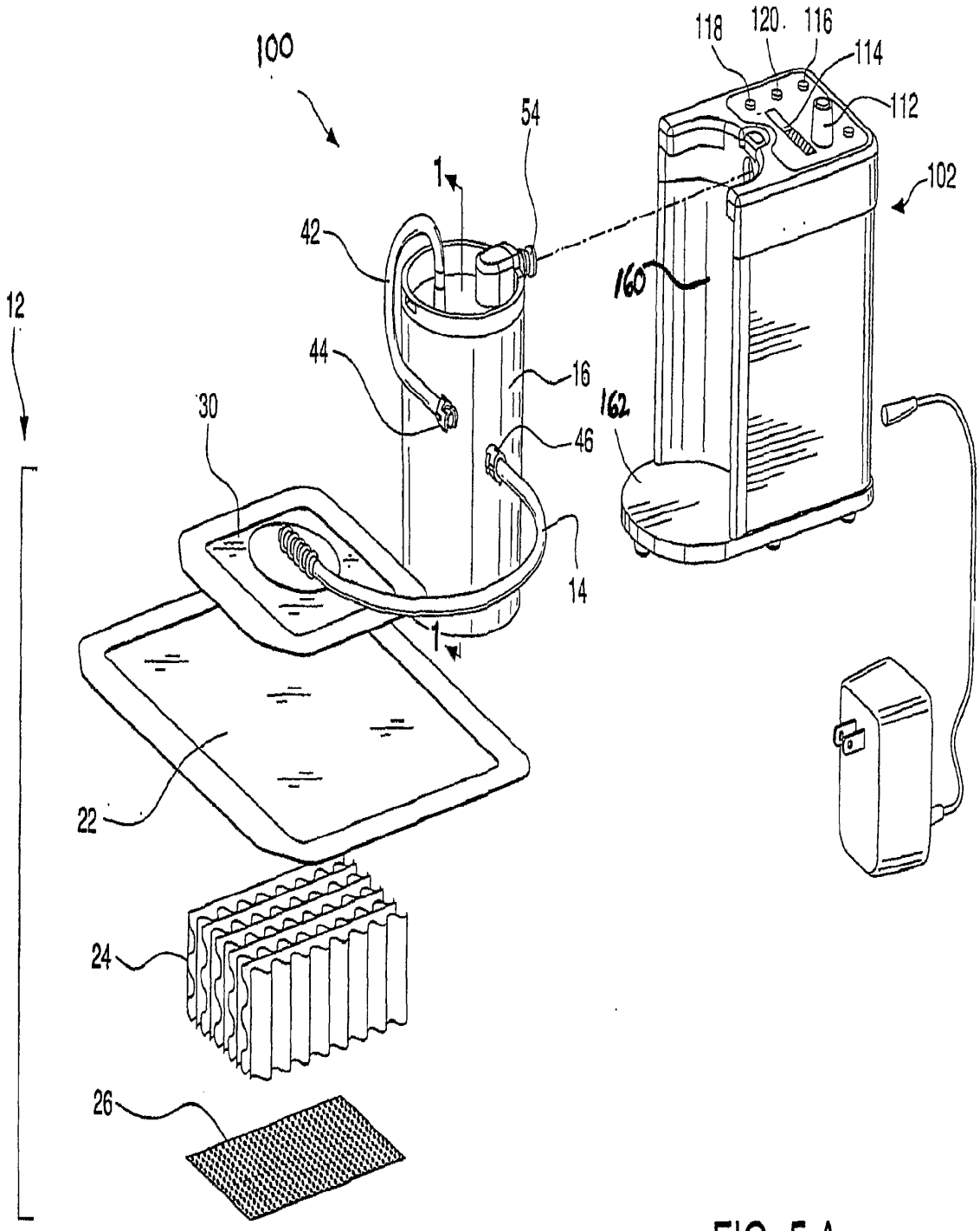

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FIG. 5A

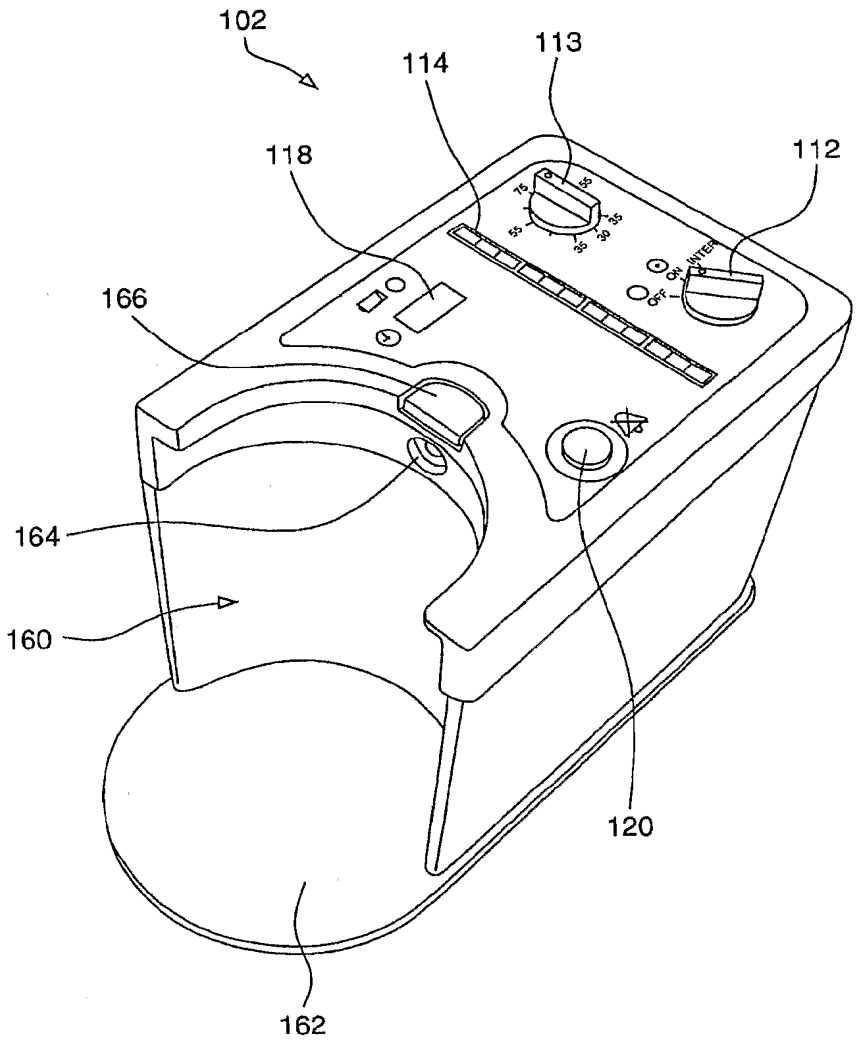



FIG. 5B



Solvetum-Exhibit 1002-0104

WALL POWER
POWER CIRCUITRY BATTERY
USER INPUTS
COMPRESSOR CONTROL CIRCUIT
104
105
103
106
FAULT DETECTION CIRCUIT
108
114
ANNUNCIATOR
NORMAL OPERATION
ABNORMAL OPERATION
COMPLIANCE
LOW BATTERY
116
118
159
120

FIG. 6A

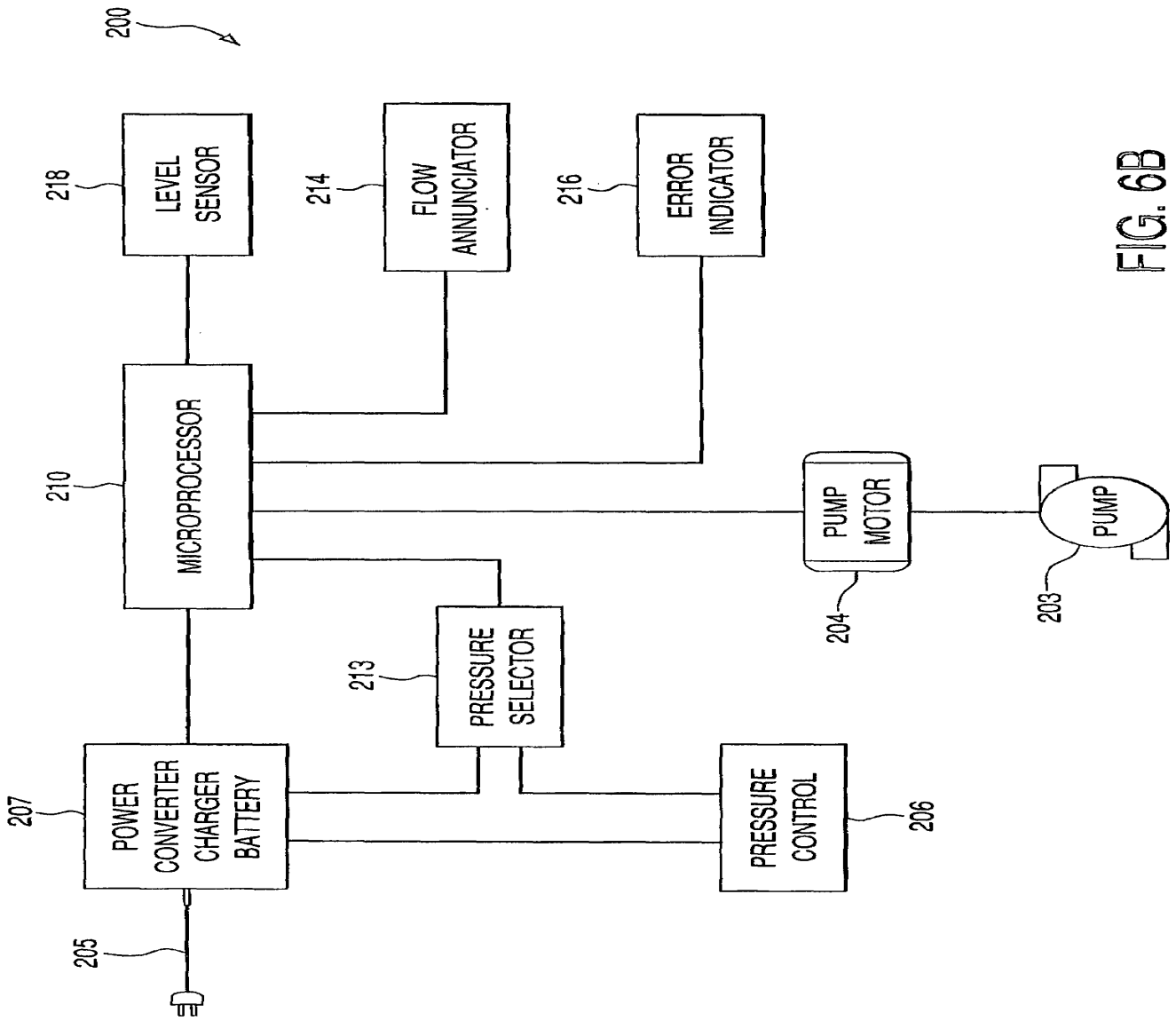



FIG. 6B



Solvetum-Exhibit 1002-0106

FIG. 7

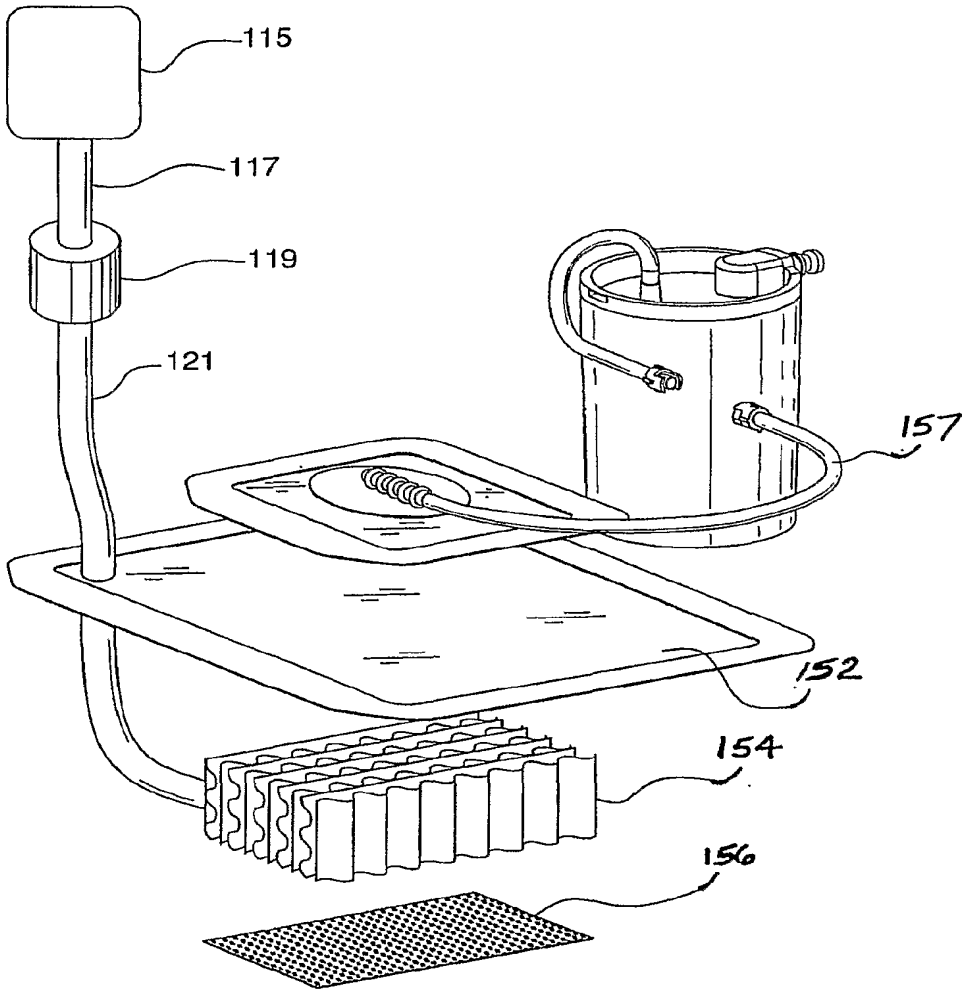



FIG. 8

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/00984

A. CLASSIFICATION OF SUBJECT MATTER
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USPC - 604/313,319,326
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - A61M 1/00,27/00; A61F 5/44 (2007.01)
USPC - 604/313,315,319,326,335,543

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X<br>--<br>Y | US 2006/0025727 A1 (BOEHRINGER et al) 02 February 2006 (02.02.2006) entire document | 26-27, 29<br>----------<br>1-25, 28, 30 |
| Y | US 2002/0198504 A1 (RISK JR et al) 26 December 2002 (26.12.2002) entire document | 1-25, 28, 30 |
| Y | US 2005/0215961 A1 (ROMANO et al) 29 September 2005 (29.09.2005) para 0015; figure 5 | 20-25 |
| Y | US 5,047,072 A (WERTZ et al) 10 September 1991 (10.09.1991) column 4; figure 4 | 24 |
| Y | US 2005/0287007 A1 (LEONHARD) 29 December 2005 (29.12.2005) para 0007; figures | 25 |

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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
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"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 31 August 2007 | 03 OCT 2007 |
| Name and mailing address of the ISA/US<br>Mail Stop PCT, Attn: ISA/US, Commissioner for Patents<br>P.O. Box 1450, Alexandria, Virginia 22313-1450<br>Facsimile No. 571-273-3201 | Authorized officer:<br>Blaine R. Copenheaver<br>PCT Helpdesk: 571-272-4300<br>PCT OSP: 571-272-7774 |

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(54) Title: PUMP SYSTEM FOR NEGATIVE PRESSURE WOUND THERAPY

(57) Abstract: A pump system for applying negative pressure to a wound, including a flow monitor capable of detecting a deviation from a reference airflow rate provided by a controlled leak to determine whether the system is operating normally or abnormally, and a flow status annunciator to indicate a normal operating condition or whether an abnormal condition is a leak or an occluded line in the system. The pump system further includes a pressure controller for regulating operation of a pump to control pressure in the system at a range around a user-selected setpoint. The pump system may also include a waste collector and a level sensor for detecting when the collector is full.

Solvetum-Exhibit 1002-0110

# PUMP SYSTEM FOR NEGATIVE PRESSURE WOUND THERAPY

## Reference to Related Applications

[0001] This application is a continuation in part of U.S. Patent Application No. 11/268,212 which was filed on November 7, 2005 and which claims priority of U.S. Provisional Application No. 60/699,218, filed July 14, 2005. This application also claims priority of U.S. Provisional Application No. 60/792,187 filed April 14, 2006, and of U.S. Provisional Application No. 60/847,221, filed September 26, 2006.

## Field of the Invention

[0002] The invention relates to the general field of wound treatment, and to the more specific field of devices for wound drainage and treatment with suction.

## Background of the Invention

[0003] It is well known to treat wounds by applying suction under airtight wound covers. The suction can be used to aspirate wound exudate and other liquids from the wound and/or the wound packing materials, and the suction can be applied as a healing modality for its well known antiseptic and tissue regeneration effects.

[0004] A primary concern in using suction assisted wound therapy is maintaining consistent suction pressure at the wound. It is increasingly recognized that once suction wound dressings are applied, the suction should be maintained at certain levels. Loss of suction to the wound can result if leaks or blockages occur in the system.

[0005] Leaks can occur through breach of the airtight seals surrounding the wound. The earliest devices merely ran a tube under the edge of a wound cover and applied an adhesive or paste around the tube and cover to maintain an airtight seal. The other end of the tube was connectable to a waste collection reservoir and suction regulator of a hospital suction system, and the pressure selected at the regulator was assumed to be the approximate pressure communicated to the wound area under the cover. The test for leakage was visual observance of the cover contracting and the absence of whistling noise when negative pressure was applied. See, e.g., M. E. Chariker, et al, "Effective Management of Incisional and Cutaneous Fistulae with Closed Suction Wound Drainage", *Contemporary Surgery,*

vol. 34, June 1989, pages 59-63. This initial check for an airtight seal did not, however, provide any warning if the system developed a leak or if blockage occurred in the collection circuit after hours of use.

[0006] The adhesive seal around the suction tube or other tubes which run under the edge of the wound cover in these prior wound dressings is vulnerable to cracking and breaching the airtight seal, creating air leakage into the cover. Improvements have been made to suction wound therapy devices to reduce the likelihood of leakage. For example, U.S. Patent Application No. 11/181,128, filed July 14, 2005 and commonly assigned with this application, discloses a tube attachment patch to allow the suction tube to be terminated outside of the primary cover and thus reduce the risk of breaking the adhesive seal to the skin. While these newer tube attachment devices provide more seal integrity, there is still the potential for breach of the airtight seals due to external causes such as patient movement in bed.

[0007] Blockage of suction to the wound can occur for several reasons. A waste collector for wound exudate is usually positioned somewhere in the suction line between the wound and the suction source. Waste collectors incorporate shut-off mechanisms that will shut off suction to the wound when the collector is overfilled. Another potential blockage is kinking or crimping of the suction line itself. Other potential blockage causes may be debris from the wound, clotting, or drying of wound exudates (particularly where the volume of wound exudates is small relative to the reference airflow). The suction source may also be inadvertently turned off, a line may be inadvertently clamped, or the suction regulator may be misadjusted after the dressing is applied. Since suction wound dressings are intended to last for long periods without changing, usually 24 hours or greater, a leak or blockage could develop unnoticed and not be detected for a duration sufficient to negate the beneficial healing effect of suction as well as increase the risk of infection. There are currently devices to sense when a waste collector canister is filled and provide a warning signal to empty it. None of the devices, however, provides a comprehensive and reliable monitoring of system operation, nor cover the full range of fault possibilities with leakage or blockage.



Solvetum-Exhibit 1002-0112

[0008] In their efforts to improve over these prior art devices, the present inventors designed a suction wound dressing monitoring system as described in U.S. Patent Application No. 11/268,212. In doing so, they consider the impracticality of locating expensive pressure transducers in any of the system components that should be single-use disposable items due to contamination by body fluids. The designers considered that the same basic system should preferably be effective in detecting and indicating both leaks and system blockage, and that the detection of leaks or blockage should preferably be effective regardless where the leak or blockage occurs in the system. They considered that the system should preferably provide clear visual indication of both normal and abnormal operation, and could usefully provide aural indication and auto-recording of abnormalities. They also considered that the suction monitoring capability should be easily convertible from use with a stationary suction system, as typically found in hospital care rooms, to use with a portable suction pump.

[0009] The inventors considered that particularly when using a stationary suction source, it would be advantageous for the monitoring system to include an air dryer or dehumidifier to remove moisture from the air suctioned from the wound. Often, the air within the system is saturated with moisture (i.e., 100% relative humidity) such that formation of water droplets due to condensation is common and likely. However, such water droplets can potentially interfere with the proper functioning of a flow monitor in the system, and may further increase the likelihood of contamination in the system. Accordingly, a dehumidifier to reduce the humidity of the air would prevent the formation of water droplets and improve the functioning of the system and help to prevent contamination.

[0010] Conversely, the inventors considered that at other times, the system is not saturated and drying of wound exudates may occur in the system conduit, causing or aggravating blockages. Therefore, in some circumstances, it may be advantageous to humidify the air being suctioned from the wound.

[0011] In addition, the inventors have considered that when using a portable pump as the suction source it would be advantageous to use an electronic flow monitor in the monitoring system to detect deviation from a reference airflow and to provide



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corresponding indicators and/or alarms. An embodiment of the electronic flow monitor could be a microprocessor that is further capable of other useful functions, such as recording and accumulating various parameters in time units and providing reports of such time records.

[0012] For safety and redundancy, the inventors considered that it would be advantageous to provide the pump with a pressure controller that is independent of the flow monitor such that the pump can control pressure to a user-selected pressure setpoint without the need to receive or rely on a signal from the flow monitor. However, the pressure controller could provide to the flow monitor data related to pump operation, such as the detection of a faulty pressure transducer or a runaway pump condition. Moreover, a signal from the flow monitor could be used to periodically or temporarily reset the pressure setpoint for the pressure controller to a second pressure lower or higher than the selected pressure, such as for intermittent operation or to create a line clearing pressure pulse if a fluid flow deviation begins to indicate a conduit occlusion.

[0013] The inventors considered that it would be useful for the flow monitor to be coupled to an annunciator on the pump unit, the annunciator including visual and/or auditory indicators, for convenient indication of status conditions related to fluid flow, such as: normal operation, low level leak, high level leak, line occlusion, and filled waste collector, as well as an indication of patient compliant use. They also considered that it would be useful for the pump to have a separate error indicator for convenient indication of error conditions that are not related to fluid flow such as overpressure detection by the pressure transducer, pressure transducer failure, waste collector canister not attached, low battery voltage, attachment of incorrect power supply, low operating time remaining, collection canister full, and pump motor not operational.

[0014] Although the waste collector could be located anywhere between the wound dressing and the vacuum source, the inventors considered that when using a portable pump vacuum source, it would be advantageous for the pump unit to provide a docking station for the waste collector, such that the collector canister can be securely attached to the pump unit. In that configuration, the pump unit may also include a level detector for detecting and indicating the fill status of the waste collector. For example, the pump unit may have a



Solvetum-Exhibit 1002-0114

level sensor, such as a capacitance sensor, to detect a filled waste collector based upon indications other than pressure differential across a hydrophobic membrane in the collector. If so, the level detector signal may be moderated by an algorithm in the flow monitor to reduce the likelihood of false indications of a full collector caused by sloshing when the pump unit with the waste collector is moved.

## Brief Summary of the Invention

**[0015]** The invention provides a wound treatment system for applying negative pressure or suction therapy to a wound. A reference airflow rate is used for monitoring system operation. The negative pressure wound treatment system includes an airtight wound dressing and a suction conduit having one end operatively associated with the wound dressing to communicate suction to the wound and an opposite end operatively connected with a source of suction. The system preferably includes a waste collector disposed in the suction conduit between the wound dressing and the source of suction for collecting fluids aspirated from the wound. The waste collector may have a residual suction capacity to draw fluid through the conduit when the suction source is shut down. The invention provides a reference airflow rate (or "controlled leak") to the suction source when the system is in operation, such that deviation from the reference airflow can be detected as an indication of a change in operation.

**[0016]** In a preferred embodiment of the invention, a portable pump unit is used as the suction source. The pump unit has a flow monitor to monitor airflow through the conduit from the wound dressing to the pump as indicative of the level of negative pressure applied to the wound. Deviation from the reference airflow rate can be used as an indication of an abnormal condition such as leakage of the wound dressing or occlusion in the conduit. The flow monitor may be controlled by a microprocessor or by solid state circuitry capable of also providing additional functions including indicating system status and system errors, and further tracking and reporting time histories of system operation. To compensate for variations in the pump volumetric efficiency at a selected setpoint pressure, the flow monitor can have a look-up table to correlate between measured and actual flow rates for a range of negative pressures.



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[0017] For safety and redundancy, the pump unit has a pressure transducer and a pressure controller that can operate independently from the flow monitor. The pressure controller may use solid state circuitry or may be controlled by a microprocessor or may be a simple mechanical-type device. A user-operable pressure selector enables a user to select a negative pressure pump output within a range of negative pressure setpoints. The pressure controller controls the operation of the pump to maintain the pressure sensed by the pressure transducer between upper and lower limits around the selected setpoint pressure.

[0018] The flow monitor provides signals to an annunciator including a flow indicator, preferably a bar meter that is color coded and gradated to provide a visual indication of fluid flow through the pump, and hence through the system conduit. The annunciator indicates when the air flow through the pump is within a range of the reference airflow that is associated with normal system operation, and conversely indicates when a deviation from the reference airflow is associated with an abnormal operation. Compliant time (i.e., the time during which system operation is normal) is accumulated so that the caregiver can make reasonable assessments as to the effectiveness of the therapy.

[0019] The pump also includes an error detector and an error indicator for displaying a visual warning of system errors that are not associated with a deviation of the flow rate through the pump from the reference airflow. Such errors may include overpressure detection by the pressure transducer, pressure transducer failure, waste collector canister not attached, low battery voltage, attachment of incorrect power supply, low operating time remaining, collection canister full, and pump motor not operational. The error detector and error indicator are preferably controlled by a microprocessor or by solid state circuitry, although other mechanisms may be used to control error detection and indication.

[0020] Although the pressure controller may operate independently to maintain the setpoint pressure, a therapy timing controller or the flow monitor can be used to reset the pressure setpoint. For example, the therapy timing controller may periodically reset the pressure setpoint between a higher selected pressure and a second lower pressure when intermittent pressure therapy is desired. For another example, the flow monitor may temporarily increase the setpoint pressure when a deviation from the reference airflow rate begins to indicate an occlusion, such that pressure controller causes the pump to start or to



Solvetum-Exhibit 1002-0116

increase in speed, creating a vacuum pressure pulse capable of clearing the conduit between the wound dressing and the waste collector.

**[0021]** The pump may also include a timing subsystem to record and accumulate the time units based upon inputs from other sensors, and to provide reports of the time units that the pump is running. The reports may include a record of runtime intervals, a record of the date and duration of runtime intervals, a record of total accumulated runtime, a record of accumulated compliant runtime, and a record of runtime remaining on a preset runtime period.

**[0022]** Various waste collectors may be constructed for collecting wound exudates under negative pressure conditions, including, for example, a flexible bag having an internal support. A preferred waste collector is a disposable upright cylindrical transparent plastic canister with fill level markings on an outside surface. The waste collector canister may be prevented from overfilling by a hydrophobic membrane filter at the top of the canister that shuts off the air flow when the canister is full. The liquids aspirated from the wound may be turned into a gel, for ease of disposal and to prevent spilling, by a gelling agent in the disposable canister. To keep the waste in the canister level, the gelling agent is preferably provided in stacked disks. The waste collector has an inlet connector for a suction tube coming from the wound dressing, and an outlet connector for connecting to a portable pump, a dehumidifier, or a flow monitor. The outlet connector is preferably a proprietary (non-standard) connector that will not connect directly to the standard appliance fitting of a stationary suction system, to prevent the wound from being subjected to excessive suction if the conduit were to be mistakenly connecting directly to the suction system without pressure regulation.

**[0023]** The pump unit may provide a docking station for the waste collector, such that the collector can be securely attached to the pump. The pump unit preferably has a docking station with a profile conforming to an outer surface of the waste collector and a releasable latch fitting adapted to receive the outlet connector of the waste collector.

**[0024]** The pump unit may have a sensor proximate to the collector docking station for detecting the level of waste in the canister, the level sensor preferably being a capacitance



Solvetum-Exhibit 1002-0117

detector. The flow monitor is capable of receiving a signal from the level sensor indicating a full collector canister, and the flow monitor may include an algorithm to be applied to the signal to reduce the likelihood of an erroneous indication of a full canister caused by liquid sloshing inside the canister.

[0025] The negative pressure wound therapy system may include a dryer or dehumidifier disposed in the conduit between the waste collector and the suction source, and preferably between the waste collector and the flow monitor, for reducing the tendency of condensate droplets to form in the system.

[0026] Some applications may necessitate adding moisture to the wound for therapeutic purposes, to maintain a clear collection conduit, or to prevent drying of wound exudates within the conduit. Moisture in the form of humidity and/or a liquid may be added to the wound via a separate conduit or directly into a calibrated vent.

[0027] The pump is preferably a portable battery-powered positive displacement pump in which flow rate is approximately proportional to pump speed, such that the flow rate of the system can be detected indirectly by measuring the motor speed or pump speed. A pressure transducer combined with an algorithm or look-up table may be used to correct motor and pump speed to flow for compressibility effect. Thus a motor speed indicator or tachometer may be the preferred monitoring instrument to provide input to the flow monitor. However, other flow rate monitoring instruments could be used, including but not limited to target meters, rotometers, turbine meters, mass flow meters, differential pressure cells, and hot wire anemometers.

[0028] The pump unit may have an activated charcoal air filter disposed at an air discharge port of the pump for reducing odors emanating from the pump. The filter may also include a desiccant. The pump may utilize a controlled backpressure to lessen the noise inherent in the operation of the check valves in a positive displacement pump, such as a leaf spring sound damper disposed over the pump outlet.

[0029] In a preferred embodiment, a calibrated vent in the suction conduit or tube near the wound dressing establishes the reference airflow by effectively providing a controlled leak rate. The calibrated vent may include, but is not limited to, an orifice, a needle valve,



Solvetum-Exhibit 1002-0118

or a sintered porous element. Preferably the vent is located in the tube just outside of the wound cover. The vent may be an aperture in the tube sealed with a porous material having specific flow rate characteristics. The reference airflow rate may be in a preferred range of 50-300 cubic centimeters per minute (cc/min). Higher flows such as 1000 cc/min are possible, but practical limitations on the capacity of the suction source and line losses inherent in small diameter tubing, as well as the ability to detect the typical magnitude of a leak in the wound dressing, suggest that is preferable to use a flow below 1000 cc/min.

[0030] By locating the vent in the conduit close to the wound dressing, the reference airflow also serves to purge the conduit of fluids and other wound exudates. The purging effect minimizes the likelihood of reflux of contaminated fluid back into the wound, and the risk of infection attendant to such reflux. Since the fluid does not reside in the conduit for an extended time, the purge effect also reduces the likelihood of blood clotting in the line. The pump system may also provide a pressure pulse generator to clear the collection line of serial slugs of fluid if a reduction in flow is detected.

[0031] Although the term "airflow" is used herein for consistency, it should be apparent that it is not limited to the composition of ambient air. It is common in medical settings to alter the composition of airflow to a wound, such as by increased oxygen or therapeutic aerosols or other beneficial medications. It is also understood that in addition to air, the suction source will draw wound exudates and bodily fluids through the suction conduit. The flow of any of these mixed gases or aerosol suspensions, any of which may include wound exudates, should be considered airflow for purpose of this description. The term "fluid flow" is sometimes used interchangeably with "airflow" to more generally indicate a flow of air, possibly including liquid exudates, in the system.

[0032] These and other advantages and aspects of the invention will become apparent upon reading the detailed description and drawings that follow.

## Brief Description of the Drawings

[0033] Figure 1 is an exploded prospective view of an embodiment of a system for negative pressure wound therapy.



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[0034] Figure 2 is a perspective view of a suction tube attachment device showing an air vent in the suction tube to create a controlled reference airflow rate to the suction source.

[0035] Figure 3 is a cross-sectional view of a waste collector of Figure 1, taken through section 3-3, showing the shutoff membrane and gel agents.

[0036] Figure 4 is a cross-sectional view of a flow monitor of Figure 1, taken through section 4-4.

[0037] Figure 5A is an enlarged perspective view of a preferred embodiment of a system for negative pressure wound therapy using a portable suction pump.

[0038] Figure 5B is a prospective view of the top front of a portable pump unit that may be used in the system of Figure 5A.

[0039] Figure 6 is a control schematic diagram corresponding to an embodiment of a pump unit.

[0040] Figure 7 is a schematic view of an alternate flow monitor using a target meter.

[0041] Figure 8 is an exploded perspective view of a portion of an alternate embodiment of a system for negative pressure wound therapy including therapeutic fluid delivery to the wound.

[0042] Figure 9 is an exploded perspective view of an embodiment of a system for negative pressure wound therapy including a dehumidifier.

[0043] Figure 10 is a schematic cross-sectional view of the dehumidifier of the system of Figure 9.

[0044] Figure 11A is a front view of the dehumidifier.

[0045] Figure 11B is a cross-sectional view of the dehumidifier of Figure 11A taken through section 11B-11B.

[0046] Figure 11C is a top view of the dehumidifier of Figure 11A.

**Detailed Description of the Invention**



Solvetum-Exhibit 1002-0120

[0047] Figure 1 shows an embodiment of a system (10) for negative pressure (suction) wound therapy. The system (10) includes a wound dressing (12), a flow monitoring device (18), and a suction regulator (20) for regulating vacuum from a stationary suction source. Figure 5A shows an alternate embodiment of a system (10) for negative pressure wound therapy where a portable suction pump unit (102) is used in place of the suction regulator (20) and the stationary suction source.

**Wound Dressing**

[0048] The wound dressing (12) typically includes a primary wound cover (22) and wound packing material (24), and may include a special wound contact layer (26). A suction tube (14) communicates with the wound packing material (24) by running under the edge of the wound cover (22), by extending through the wound cover (22), or by terminating outside of the wound cover (22) and communicating with a nozzle or slot in the wound cover (22). Various wound dressings (12) may be used comprising a wide variety of wound covers (22), wound packing materials (24), optional wound contact layers (26), and means for communicating the suction tube (14) with the packing material (24). The wound dressing (12) shown in the drawings and described herein uses presently preferred components, but the invention is generally applicable to any wound dressing subsystem (12) and is not intended to be limited to any particular components.

[0049] The primary wound cover (22) is preferably an airtight wound cover that is vapor permeable. The term "airtight" means that the material is sufficiently occlusive to resist airflow through the cover to maintain suction under the cover while suction is being applied. It is preferred to use a thin film transparent commercial bandage, such as medical grade Tegaderm™ manufactured by 3M, that is impermeable to liquids but permeable to water vapor and oxygen. There are many other thin-film commercial bandages that have similar properties. Highly impermeable materials could also be used. However, since it is beneficial in wound therapy to allow water vapor to escape and oxygen to migrate into the wound, semi-permeable covers of film material such as Tegaderm™ are preferred. In some instances, the primary wound cover (22) could also be a rigid or semi-rigid enclosure placed over the wound. The primary wound cover (22) is generally sealed to the skin surrounding the wound with an adhesive (not shown) incorporated in the wound cover (22), and gap filler paste (not shown) may be used where needed.



Solvetum-Exhibit 1002-0121

[0050] Before the wound cover (22) is applied, the wound is generally packed with a wound packing (24). The wound packing (24) may include simple gauze or foam pads or other materials commercially sold as wound packings. The presently preferred wound packing (24) is polyester fibers or comparable resilient fibers in a corrugated layer pattern configured to form a resilient compressible structure, as described in U.S. Patent Application No. 10/981,119, commonly assigned with this application.

[0051] The wound packing (24) may also be attached to a wound contact layer (26). The presently preferred wound contact layer (26) has a special construction that provides a wound contact surface, with depressions formed into the surface, to work in conjunction with the suction to encourage more rapid tissue regeneration, as described in U.S. Patent Application No. 10/982,346, commonly assigned with this application. The contact surface is configured such that voids formed by the depressions remain above the wound surface in the presence of moisture, compressive forces, and suction, thus encouraging local tissue deflection.

[0052] The wound dressing (12) has a suction tube (14) attached to the wound cover (22), as shown in Figure 2. The wound dressing (12) may have one or more other tubes (28) for medication supply or wound flushing. The tube(s) (14, 28) may pass through the wound cover (22) or under the edge thereof, but a presently preferred arrangement uses a tube attachment patch (30) to allow the suction tube (14) to be terminated outside of the primary wound cover (12) to reduce the risk of breaking the adhesive seal to the skin, as described in U.S. Patent Application No. 11/181,128, commonly assigned with this application.

[0053] A distal end of the suction tube (14) in this embodiment has a vent hole (32) that is sealed with a porous plug (34). The porous plug (34) provides a controlled leak, or reference airflow, for flow monitoring devices described hereafter, including the flow monitoring device (18). The vent (32, 34) should be located outside the primary wound cover (22) but is preferably located as close to the wound cover (22) as possible. An advantage of having the suction tube (14) connected to the tube attachment patch (30) outside of the wound cover (22) is that controlled leak reference airflow may be used without drying out the wound, as might occur if the suction tube (14) passed under the



Solvetum-Exhibit 1002-0122

wound cover (22) near the wound. While it is feasible to route the suction tube (14) under the wound cover (22) while the controlled leak vent (32, 34) is outside of the actual wound space, it would be important to avoid excessive drying of the wound tissue due to the introduced airflow. In addition, it is possible with the type of tube attachment patch (30) shown in Figure 2 and described in U.S. Patent Application No. 11/181,128 to provide the porous vent (32, 34) as an aperture in the patch (30).

**[0054]** A wound therapist applies the wound dressing (12) to the patient and attaches the system to suction. The therapist remedies leaks in the dressing by smoothing out creases or wrinkles in the wound cover and addressing gaps due to folds in the patient's anatomy. It has at times been useful to address specific areas of difficult anatomy by using a gap filling paste, as is common in ostomy care, such as moldable strip paste from Coloplast. The airflow monitoring instruments described hereafter facilitate the initial dressing set up process by providing active feedback to the therapist on the integrity of the seal around the wound dressing and tubes.

**Waste Collector**

**[0055]** Since a primary function of negative pressure or suction therapy is to drain liquids from the wound, a system (10) normally includes a waste collector (16) for collecting fluids aspirated from the wound. As shown in the embodiment of Figure 1, the air passage through the collector or container (16) forms a part of a suction conduit between the wound and the suction source. As shown in cross-section in Figure 3, the collector (16) may be an upright canister (36) with a right circular cylinder profile. The canister (36) is preferably made of a transparent or semi-transparent material such as plastic that enables viewing of the level of liquid contained therein. The canister (36) may have fill level markings in a band extending vertically along the outside of the canister. The markings may be on a paper label adhesively glued to the canister (36) or may be marked, embossed, or etched directly onto the canister (36). The fill level markings may also be created on the pump unit (102). The canister (36) is preferably a disposable, single-use device. The canister (36) has a lid (38) incorporating a fitting (40) passing through the lid (38) for the attachment of an inlet tube (42). The inlet tube (42) may be an end of the suction tube (14) leading from the wound or a short section of tube that terminates with a connector fitting (44) for mating with a matching connector fitting (46) on the end of the suction tube (14).



Solvetum-Exhibit 1002-0123

[0056] Airflow and any blood or other fluid aspirated from the wound passes through the fitting (40) in the lid and into the canister (36). The liquid is retained in the canister (36), while the air rises and is drawn through a hydrophobic membrane (50) sealed to the inside of the lid (38). The upstream side of the membrane (50) interfaces with the interior of the canister (36) and the downstream side of the membrane (50) interfaces with an outlet air channel (52). The membrane (50) acts as a bacteria filter. Because the membrane (50) is hydrophobic, it can be used as a shut off mechanism to prevent the canister (36) from overflowing and to prevent contamination from flowing out of the collector (16) toward the suction source. If the canister (36) is allowed to fill high enough for the contents to contact the membrane (50), the membrane (50) occludes and blocks airflow from passing through the collector (16). Blockage of the membrane (50) prevents suctioning more waste from the wound, and as described hereafter, the blockage of reference airflow is detected as an indication of an abnormal operating condition. In other embodiments described hereafter, the level of waste product in the canister (36) can be detected by a capacitance sensor or other detector on the pump unit (102), and the detection used to prevent overfill of the canister (36).

[0057] The lid (38) defines the outlet air channel (52) extending from the downstream side of the membrane (50) to a connector (54) for connecting the collector (16) to the portable pump unit (102) or to a tube (58) running to a stationary wall suction system. However, the connector (54) is preferably a proprietary (non-standard) connector that will not connect directly to the standard appliance fitting of a stationary suction system, in order to prevent the collector (16) from being mistakenly connected directly to the suction system without the flow monitoring device (18) and pressure release features described hereafter; connecting the collector (16) directly to a suction system could risk applying too great a suction to the wound. The mating receptacle in the portable pump configuration described hereafter is configured to receive the proprietary connector. The connector (54) includes a sealing element such as an o-ring seal. This arrangement provides that a fresh o-ring is preferably used with each disposable collector (16), as contrasted with other pump connectors where the sealing element is in the pump and will ultimately wear out and cause the system to fail because of leakage.



Solvetum-Exhibit 1002-0124

[0058] Preferably the liquid waste sucked from the wound is turned into a gel for ease of disposal and to prevent spilling or splashing. Although the gelling agent could be provided in porous bags, it is preferred to use disks (56) of laminated fiber sheets containing a gelling agent, such as provided by Gelok International. The disks (56) are cut to fit inside of the canister (36) and are stacked on top of each other. The stacked disks (56) cause the liquid to turn to a level surface gel in the canister (36).

**Controlled Reference Airflow**

[0059] Some prior art negative pressure wound therapy systems do not monitor the flow of fluid (air and effluents) being suctioned from the wound dressing (12), while others do so less than optimally by trying to directly sense pressures at the wound. In contrast, the system described herein uses a reference airflow, as may be provided by a calibrated orifice, valve, or filter or by the controlled leak air vent (32, 34), to indicate whether the system is in normal or abnormal operation. The porous plug (34) is calibrated to provide a known reference airflow or controlled leak. A flow rate at or near the reference airflow indicates normal operation, while a flow rate that deviates appreciably (either higher or lower) from the reference airflow indicates abnormal operation. A flow rate higher than the reference airflow indicates leakage, while a flow rate lower than the reference airflow indicates blockage or occlusion or a full waste collector (16).

[0060] The reference airflow rate from the calibrated vent (32, 34) is used for monitoring fluid flow and thus for assessing overall system operation. The controlled leak rate should be low to maintain a proper suction at the wound site and a moist healing environment. Preferably the reference airflow is in the range of 50-300 cubic centimeters per minute (cc/min). More preferably, the reference airflow is approximately 100 cc/min. A flow of 50-300 cc/min is low enough to minimize drying and does not significantly alter the suction applied at the wound. Additionally, the flow is low enough to minimize the use of battery power where a portable pump is used as the suction source. A flow of this magnitude is readily obtained by providing a vent hole (32) in the suction tube that is sealed sterile with a porous plug (34). A suitable seal material for the porous plug (34) is a porous plastic manufactured by Porex from sintered high density polyethylene. Such porous materials are routinely employed to admit air into medical fluid lines at a sufficient flow rate to maintain an efficient sterile filtration barrier against microbes.



Solvetum-Exhibit 1002-0125

[0061] An advantage of providing the reference airflow is that the tube (14) between the wound packing (12) and the waste collector (16) remains relatively clear of fluids since the continuous flow will encourage rapid movement of a plug of fluid from the wound packing (13) to the collector (16). Liquid aspirated from a wound may contain sufficient blood materials that it could be prone to clotting in a collection tube, lumen, or conduit if allowed to sit in a stationary condition for a period of time, and a clot in a collection line would result in loss of suction being applied to the wound. The reference airflow eliminates this potential problem. Typically, it is expected that the tube (14) could be cleared by the reference airflow in less than ten seconds, depending on the distance.

[0062] The range of flows suitable for a reference airflow rate are bounded at the lower end by the permeability of the wound cover (22) and at the upper end by the suction capacity of the suction source or pump. When the wound cover (22) is a semi-permeable material, there will be a natural low level background airflow from air molecules passing through the wound cover (22). This permeation airflow could serve as the reference airflow if the flow monitoring instrument were very sensitive. However, the permeation flow is usually too low and too erratic to be a good reference. Variations in the area of the cover and the possibility of the cover being obstructed by drapes and fluid from the wound can cause the permeation flow to be erratic. Thus, a calibrated vent, such as the porous vent (32, 34) is a preferred reference because it provides a larger and more stable flow rate that masks variations in the permeation flow. For example, Tegaderm® bandage will allow a diffusion of water on the order of 800 grams per square meter per day, which correlates to a flow rate of about 0.5 cc/min over a square meter. Typical wound cover area would be less than a tenth of a square meter, so in approximate terms, the semi-permeable material contributes 0.05 cc/min, or less than 0.1% of a reference airflow of 50 cc/min. Thus, any variation in the background permeation flow is masked by the larger reference airflow.

**Flow Monitoring Device for Use with Stationary Suction Source**

[0063] At least two embodiments of the flow monitoring device (18) may be used: a gradated mechanical indicating float meter (19) as shown in detail in Figure 4 and an electronic non-numerical indicator (232) as shown in detail in Figure 5B. The float meter (19) would preferably be used in conjunction with a stationary suction source (20) while the non-numerical indicator (232) would preferably be used with a portable pump unit (102)



Solvetum-Exhibit 1002-0126

having a flow monitor (206). Other types of flow monitoring and indicating devices, such as target meters or hot wire anemometers could also be used.

[0064] In the system (10) of Figure 1, the flow monitoring device (18) comprises a float flow meter (19) that includes a suction conduit (58) interconnecting between the waste collector (16) and the stationary suction source. One end of the conduit (58) includes a mating connector (60) adapted to receive a proprietary connector (54) on the collector (16). The flow monitoring device (18) is preferably located at the opposed end of the conduit (58) from the collector (16) and attaches directly to an appliance connection fitting (64) associated with the adjustable suction regulator (20) as commonly found on stationary suction systems.

[0065] The flow meter (19) provides a visual indication of the flow rate through the system (10). During normal operation, once the flow rate has stabilized following an initial application of suction, the flow meter (19) provides a visual indication corresponding to the reference airflow rate. As long as the flow meter (19) maintains a visual indication of reference airflow rate, the system (10) is operating normally and is free of leaks or blockage, and hence the wound dressing (12) is subject to an acceptable level of suction. When the flow meter (19) provides a visual indication of a deviation to a higher air flow, the system (10) is operating abnormally because a higher air flow indicates leakage. The flow meter (19) may include one or more gradations of flow rates higher than reference airflow to indicate the magnitude of a leak. When the flow meter (19) provides a visual indication of a deviation to a lower air flow, the system (10) is operating abnormally because a lower air flow indicates occlusion or blockage in the system between the wound dressing (12) and the flow meter (19).

[0066] Figure 4 shows a cross-sectional view of the float meter (19). A standard connector (63) on the top end of the indicator attaches to a short conduit (62) connectable to the appliance fitting (64) of the adjustable suction regulator (20). At the bottom end of the flow indicator a standard connector (59) is attached to the suction conduit (58).

[0067] As shown in Figure 4, the flow meter (19) includes a clear tube (76) gradated into progressive sections (68, 70, 72, 74), each section having a different inside diameter.



Solvetum-Exhibit 1002-0127

The narrowest section (68) is disposed at the bottom of the flow meter (19) and each successive section (70, 72, 74) moving upwards through the tube (76) is progressively larger in diameter. The gradated markings (not shown) indicate an airflow rate corresponding to various vertical locations along the tube (76). A float (78) is disposed within the tube (76) and serves as an indicator of flow rate through the flow meter (19) and thus through the system (10). Each section (68, 70, 72, 74) indicates a range of flow rates at which the float (78) will reside in that respective section.

[0068] The mass of the float (78) works in cooperation with the density (i.e., the pressure) of the flowing fluid and the clearance between the outside of the float (78) and the inside wall of the tube (76). It is typical to use suction in the range of 25-200 mm Hg in wound therapy. Accordingly, the flow monitoring device (18) incorporates a first flow restrictor (66) having an orifice (67) that is calibrated to restrict suction airflow to be less than 20 liters per minute when a controlled level of suction of 100 mm Hg is applied by the suction regulator (20). The density of the float (78) and the inside dimensions of the tube (76) are preferably calibrated for flow at a pressure of 100 mm Hg, although the indicated flow rates at different pressures are readily calculated. Additionally, the response of the float (78) to various flow rates and pressures through the same tube (76) can be changed by changing the density of the float (78).

[0069] The float (78) responds to airflow rate and will rise to a level where the dynamic forces are in equilibrium, balancing the upward force of the flow against the downward force of gravity. The gradated tube (76) is in contrast to typical flow indicators for other applications which have tubes with continuously increasing inner diameters. In those types of meters, slight changes in flow rate cause the float to chatter up and down around a height indicative of the flow rate. The use of discrete sections of uniform diameters, but increasing in progression, as the four sections (68, 70, 72, 74) in the tube (76) of the preferred flow indicator (19), reduces the chatter and causes the float (78) to move upward in stages. These stages are selected for discrete flows that provide easily interpreted reference information regarding the suction applied to the wound.

[0070] When there is no air flow, or an air flow rate less than the reference airflow, the float (78) rests at the bottom of the tube (76) in the lowest section (68). The lowest section



Solvetum-Exhibit 1002-0128

(68) is preferably color-coded blue to indicate a blockage condition, such as a full collector (16) or an occlusion in the fluid path such as a blocked vacuum tube (14). When the flow into the flow meter (19) corresponds to the reference airflow, preferably between about 50 cc/min to about 300 cc/min, the clearance between the float (78) and the bottom section (68) of the tube (76) is such that the flow around the float (78) will cause the float (78) to rise into the next progressively wider section (70). Thus, normal reference airflow will cause the float (78) to rise a discernable amount into the next section (70). The section (70) of normal operation is color-coded green, indicating an acceptable condition.

**[0071]** When flow through the system (10) increases beyond an acceptable level due to a leak in the wound dressing (12), the clearance around the float in the normal position (70) may no longer be adequate to allow the float (70) to remain in this position, and the increased flow will lift the float (78) to a higher section in the tube (76) where the internal diameter is stepped up. The gradated labeling on the outside of the tube (76) provides a visual indication of the extent of the leak condition. The tube (76) includes at least one section (72) of increased diameter to indicate a leak condition and preferably includes two sections (72, 74) to indicate two levels of leak conditions, wherein the lower level leak condition section (72) is disposed immediately above the normal operation section (70), the section (72) having a larger diameter than the section (70), and the higher level leak condition section (74) is disposed immediately above the lower level leak condition section (72), the section (74) having a larger diameter than the section (72). The lower level leak condition section (72) is color-coded yellow, indicating a minor leak requiring repair. The higher level leak condition section (74) is color-coded red, indicating a major leak requiring immediate repair. The stepped up diameters require a significant change in flow before the float (78) will jump from one position to a higher one, thus eliminating the jumpiness that would be encountered with a continuous taper inner diameter as common in flow meters for other applications. Further, the stepped diameter sections (68, 70, 72, 74) reduce user interpretation, thus enhancing ease of use and safety. Additional stepped up diameter sections may be provided to indicate higher leak conditions or finer gradations in the level of leak.

**[0072]** The flow monitoring device (18) also incorporates a safety valve (80) that limits the maximum suction that may be applied through the system (10), guarding against the



Solvetum-Exhibit 1002-0129

accidental application of excessively high levels of suction to the wound. It is typical to use suction in the range of 25-200 mm Hg for wound drainage and therapy. Accordingly, the suction limiting feature may preferably be set to limit the suction to no more than approximately 200 mm Hg. The safety valve (80) includes a suction pressure relief chamber (84) formed between the first flow restrictor (66) and a second flow restrictor (82) having an orifice (83). The orifice (83) is preferably about the same size as the orifice (67) in the first flow restrictor (66) to prevent the flow capability of the suction regulator (20) or the pump (103) from overpowering the relief capability of the safety valve (80). A resilient valve mechanism (86) in the relief chamber (84) serves as a release against the application of high levels of suction. The valve mechanism (86) is spring loaded to a predetermined suction setting, such as 200 mm Hg. If the suction pressure in the relief chamber (84) exceeds the predetermined setting, the valve mechanism (86) will open and allow vent air to be drawn into the system (10) from a relief port (69) to prevent excess suction from being applied to the patient's wound.

**[0073]** Protrusions (75) may be provided on the top underside of the interior of the float meter (19) adjacent to the first flow restriction orifice (67) to prevent the float (78) from completely blocking the orifice entry (67) to the pressure relief chamber (84), thus allowing the continued flow of fluid through the system (10) even if a major leak occurs. This allows continued communication of some suction to the wound even at high airflow rates. Alternatively, the protrusions could be located on the top surface of the float (78).

**[0074]** While the flow monitoring device (18) using a float meter (19) has been described in the context of a hospital wall suction system, it can also be used with suction pumps such as the portable pump unit (102), as is described below.

**Dehumidifier**

**[0075]** The negative pressure wound therapy system may include an air filter/dryer or dehumidifier (21) to protect the downstream components, and in particular the suction source, from potential contamination in the form of particulate matter, aerosols, and humidity. The dehumidifier (21) is preferably disposed in a system conduit between the waste collector (16) and the flow meter (19). Figure 9 illustrates an embodiment of the



Solvetum-Exhibit 1002-0130

negative pressure wound therapy system including the air dryer or dehumidifier (21) conveniently integrated into a mount for the waste collector (16).

[0076] The dehumidifier (21) may include a particle filter (68) for removing airborne dust as may be encountered when the flow meter (19) is disconnected from the collector (16) for periodic changeover. Humid air exits the waste collector (16) after any liquids have been substantially removed from the wound exudates, but sufficient moisture may remain in the air such that the relative humidity is at or near 100%. At such a high relative humidity, any drop in temperature or pressure may cause condensate to drop out of the air. Accordingly, the dehumidifier (21) removes moisture from the humid air that could otherwise effect the calibration of the flow meter (19). A desiccant or other means of humidity control can be placed in the dehumidifier (21), as required.

[0077] The dehumidifier (21) may also operate by removing moisture from the humid air exiting the waste collector (16) by causing the humid air to pass across one side of a membrane (260) that is impermeable to air but is permeable to water vapor, and concomitantly causing ambient room air, at a relative humidity level much less than 100%, to pass across an opposite side of the membrane (260). Figure 10 schematically illustrates operation of the dehumidifier (21). Due to the properties of the air-impermeable, water vapor-permeable membrane (260), moisture from the higher humidity system air is transferred to the lower humidity room air. The lowered humidity of the system air exiting the dehumidifier (21), at a relative humidity below 100%, prevents the formation of condensation droplets in downstream components such as the flow meter (19) or the suction source.

[0078] The dryer or dehumidifier (21) includes two separate airflow paths (A) and (B) separated by the generally air-impermeable, water vapor-permeable membrane (260). Because the flow meter (19) is a precise device that indicates the quantity of system fluid flow, the dehumidifier is constructed so that the membrane (260) is air tight and air-impermeable such that air from the room side (B) cannot mix with air on the system side (A). At the same time, the membrane (260) should have good water transport properties to remove water from the system air. The membrane (260) is ideally a Dupont Nafion membrane with known water vapor transport properties, although other similar or



Solvetum-Exhibit 1002-0131

equivalent membrane materials may be used. System air (a), having high humidity, flows from the waste collector (16) into a dehumidifier inlet (262). System air (a) flows across a surface (264) of the membrane (260) and then out a dehumidifier outlet (266) after passing through a particulate filter (268). System air then flows to the flow meter (19). Ambient air (b) enters the a dehumidifier inlet (270) and flows across a surface (272) of the membrane (260). Ambient air (b) exits a dehumidifier outlet (274) and is drawn into the suction source via a conduit (61).

[0079] System air (a) exiting the waste collector (16) is generally very humid (up to 100% relative humidity) due to the liquids that are being collected from the wound. Ambient air (b) is generally less humid; most hospital environments may have relative humidity in the 50% range, depending of course upon the prevailing outside temperature and weather conditions. The resultant moisture gradient across the membrane (260) causes water vapor (c) to be transported through the membrane (260) from the system air flowpath (A) to the ambient air flowpath (B), thus removing water vapor from the system air. As a result, the relative humidity of the system air is reduced to less than 100%, preventing condensation droplets from forming in the flow meter (19) and minimizing the chance that the flow meter (19) will malfunction due to water droplet formation.

[0080] Figures 11A, 11B, and 11C illustrate the dehumidifier (21) in more detail. In a preferred embodiment, as shown, the dehumidifier (21) also serves as a mount for the waste collector (16). The system air inlet (262) serves to accept the outlet connection fitting (54) of the collector (16), which may be secured to the dehumidifier (21) by a spring-loaded latch (280). A set of extending nubs (282) support the membrane (260) inside the dehumidifier (21) and provide flow channels for the system air to pass on the (A) side and position the membrane (260) to provide a flow passage for ambient air to pass on the (B) side.

**Portable Pump Unit for Use as the Suction Source**

[0081] The system (10) described herein may be used in conjunction with a stationary suction source as provided in most medical buildings, or may be used in conjunction with electrical power pumps to provide suction for wound therapy. However stationary suction sources, and even electric power pumps that may be moved from outlet to outlet, have



Solvetum-Exhibit 1002-0132

limited portability. Accordingly, an embodiment of the system (100) provides a truly portable battery powered pump unit (102). In a portable pump embodiment (100) of the suction system, as shown in Figure 5A, the suction source is a portable suction pump unit (102) instead of a stationary suction source. Additionally, the use of an electronically controlled suction pump, for example by using a pump unit controller (200) as illustrated in Figure 6, provides the ability to incorporate further advanced control, monitoring, and alerting features into the negative pressure wound treatment system (100).

**[0082]** The pump unit (102) connects to the same patient circuit, including the wound dressing (12) and the waste collector (16), as described in regard to the negative pressure wound therapy system (10). The pump unit (102) preferably operates on low voltage DC power and has an onboard power source (222) such as a 12 volt battery. The pump unit (102) may also be adapted to be powered through a power cord from a standard AC power socket using a suitable AC/DC power converter (220), which may be combined with a battery charger to recharge the battery (222) during use. The pump unit (102) can receive DC power either from the converter (220), when plugged in, or from the battery (222), when used un-plugged.

**[0083]** The pump unit (102) is configured to produce controlled levels negative pressure. As shown in detail in Figure 5B and schematically in Figure 6, the pump unit (102) has a Mode Selector switch (204) to select between On, Off, and Intermittent control modes, and a pressure selector dial (206). A prescribed pressure setting is selected using the pressure selector dial (206). The available range of setpoints is preferably between about 30 mm Hg and 100 mm Hg, and is more preferably between about 30 mm Hg and 75 mm Hg. In one embodiment, discrete pressure setpoints of 20, 30, 40, 50, 60, 70, and 75 mm Hg are offered. Additionally, setpoint choices of 100, 125, 150, 175, and 200 mm Hg may be offered. The pump power may be placed into a On state, an Off state, or an Intermittent state using the Mode Selector switch (204). In the Off state, the pump unit (102) will not operate. In the On state, the pump unit (102) will operate based on the selected pressure setpoint. In the Intermittent state, the pump unit (102) will operate cyclically between a higher pressure setpoint selected by the selector dial (206) and a prescribed lower pressure setpoint, as will described in greater detail below.



Solvetum-Exhibit 1002-0133

[0084] Referring to the schematic diagram of Figure 6, the portable pump unit (102) preferably includes a positive displacement air pump (103), a variable speed DC motor (104), a tachometer (212), a pressure transducer (208), a level sensor (214), a pump unit controller (200), and an annunciator (230). The pump unit controller (200) comprises a pressure controller (202), a flow monitor (210), an error detector (216), a therapy timing controller (224), and a timing subsystem (218). The annunciator (230) comprises a flow status indicator (232), an error indicator (234), a compliance indicator (236), and an audible alarm (238). The flow status indicator (232) is capable of indicating normal or abnormal flow conditions, and the error indicator (234) is capable of indicating other status, fault, or alarm conditions. In the depicted embodiment, the pump unit controller (200) may include one or more of a microprocessor, solid state electronic device, electromechanical devices, mechanical or pneumatic devices, or other equivalent control elements. If a microprocessor is used for performing functions including pressure control, flow monitoring, error detection, and status and alarm annunciation, a suitable processor is a Microchip 16 Series, part number 16F688, it being understood that other similar programmable logic devices could be used.

Vacuum Pressure Control

[0085] Referring to the embodiment schematically illustrated Figure 6, the pump unit controller (200) includes a vacuum or suction pressure controller (202) for maintaining a negative pressure in the wound. The pressure controller (202) is independent of the flow monitor (210), regardless whether the pressure controller (202) and/or flow monitor (210) use a microprocessor or an alternative means such as solid state control circuit. The pressure controller (202) regulates operation of the pump unit (102) based on a signal from a pressure transducer (208) that monitors the negative pressure produced at the suction side of pump (103). The pressure transducer (208) is preferably located in a conduit between the waste collector (16) and the pump (103). Alternatively, a low-cost pressure transducer (208) may be placed directly within the wound cavity and the signal from the transducer (208) conducted via wires to the pressure controller (202).

[0086] The pressure controller (202) receives a setpoint from the user positionable pressure selector dial (206). In an embodiment, the pressure controller (202) includes a solid state logic device and the selector dial (206) changes the resistance of a variable



Solvetum-Exhibit 1002-0134

resistor to produce an electrical signal representing the selected pressure setpoint. The pressure controller (202) receives the selected pressure setting as an input, and sets an upper limit and a lower limit in a range above and below the selected pressure setpoint. The range between upper limit and the lower limit is selected to provide a reasonably stable suction level while minimizing the on-off cycling of the pump motor (104). A range of approximately 10 mm Hg is preferred to optimize patient comfort and to minimize noise. The pressure controller (202) will function to maintain the pressure sensed by the transducer (208) between the two limits defining the range about the pressure setpoint. Such control circuits are commonly employed in industrial applications as well as in hospital central suction systems.

**[0087]** When the pump unit (102) is initially turned On by the Mode Selector switch (204), the pressure controller (202) causes the pump motor (104) to start running, driving the positive displacement pump (103). The pump motor (104) continues to run until the pressure transducer (208) detects pressure at or exceeding the upper vacuum limit of the pressure range set by the pressure controller (202) in response to the pressure setpoint on the selector dial (206). The pressure controller (202) continually compares the pressure signal from the pressure transducer (208) to the setpoint limits bounding the range about the operator-selected pressure setpoint. Once the upper control limit is reached, the pressure controller (202) turns off the pump (103). Normal reference airflow in the system (10) will cause pressure at the transducer (208) to decay towards the lower limit of the control range. Once the detected pressure has reached the lower control limit, the pressure controller (202) will turn the pump (103) back on, and the process is repeated cyclically. Thus, the pressure transducer (208) senses the current negative pressure in the system (10) and the pressure controller (202) turns the pump (103) on and off accordingly to maintain negative pressures that are within the selected desired range.

**[0088]** The motor (104) is preferably a variable speed DC brushless motor. However other styles of DC motors are acceptable, as well as AC motors that can be equipped with variable outputs. When a variable speed motor is used, the speed is controlled via a pulse width modulation (PWM) feature of the pressure controller (202). Variable speed control allows for efficient use of DC power. When a constant speed motor is employed, the on/off time is varied such that the motor is cycled on and off at the most efficient operating speed.



Solvetum-Exhibit 1002-0135

[0089] The positive displacement pump (103) preferably uses a diaphragm style pump with inlet and outlet check valves. The diaphragm pump crankshaft is operationally connected to the shaft of the variable speed motor (104). Other positive displacement pumps may be used, such as peristaltic, piston, lobe, syringe or rocking piston pumps.

[0090] The tachometer (212) can be used to indicate the rotational speed of the motor (104) or pump shaft. Within the generic term "tachometer" various forms of motor or pump speed sensors may be used. For example, Hall sensors and encoders are commonly employed on DC brushless motors to indicate motor RPM (revolutions per minute). It is also possible to sense back-EMF in brush versions of DC motors to determine motor shaft rotation speed. In an AC motor driven pump, an oscillating bar with a magnet mounted to an end may be excited by an AC coil, thus driving a diaphragm, and a count of the oscillations delivered by the coil can be used as an indicator of pump speed. Regardless the type of tachometer, such a tachometer can be used to infer or determine the flow rate of fluid displaced by the pump unit (102). Because there is a direct correlation between the speed of the positive displacement pump (103) and the actual volume of fluid displaced at a given operating pressure, a measurement of the pump speed combined with a measurement of pressure at inlet of the pump (103), as measured by the pressure transducer (208), can be used to calculate flow rate. Thus, measuring the speed of the positive displacement pump (103) is a surrogate for direct airflow measurement.

[0091] As described above, the pressure controller (202) will cause the pump (103) to run as necessary to maintain the level of vacuum pressure sensed by the transducer (208) within the desired range of the selected negative pressure setpoint. The pressure controller (202) may modulate the on-time duration of the pump (103) to maintain the negative pressure in the desired range. The on-time duration of the pump (103) can be increased or decreased as required by the pump controller (202) to achieve greater or lesser suction, respectively. When a variable speed motor (104) is used, the motor speed can also be adjusted by pulse width modulation, separately from or in combination with the on-time duration, to operate the motor (104) at an efficient speed. Accordingly, the pressure controller (202) can adjust either or both the on-time duration and pump speed to maintain the negative pressure in the range established by the selected pressure setpoint. Thus, the pressure controller (202) operates based on sensed pressure, and not on sensed air flow.



Solvetum-Exhibit 1002-0136

This allows the pressure controller (202) to function independently from the mechanisms for detecting, monitoring, and displaying the status of flow in the system (10) that are embodied in the flow monitor (210) and the error detector (216).

Flow Monitor and Flow Status Indicator

[0092] As shown in Figure 6, the flow monitor (210) can be adapted to monitor pump activity (i.e., on-time duration and speed) as an indicator of the flow rate of air through the negative pressure wound therapy system (10). The flow monitor (210) is coupled with the flow status indicator (232) in the annunciator (230) to provide audible and visual indication of the status of operation of the system (10) by comparing the fluid flow rate to the reference airflow rate and annunciating indicators of normal or abnormal operation. The flow monitor (210) functions independently from the pressure controller (202). Preferably the flow monitor (210) receives input from sensors that detect pump motor activity, determines a flow rate based upon the motor activity sensor inputs, identifies deviations from the reference airflow rate, and provides a signal to the flow status indicator (232) identifying either a normal state of operation or one of at least two abnormal states of operation.

[0093] The flow monitor (210) is capable of performing flow monitoring functions necessary to compare the fluid flow rate to the reference airflow rate and determine normal or abnormal operational status. To monitor flow rate, revolutions of the motor (104) or positive displacement pump (103) are counted over a period of time, and the count, along with the pressure transducer (208) measurement, is provided as input to the flow monitor (210). An algorithm in the flow monitor (210) correlates the rate of motor revolutions (i.e., count per time), adjusted for pressure, to determine the volumetric flow rate of air passing through the pump (103). The flow monitor (210) compares the calculated flow rate to the known reference airflow rate to determine fault conditions.

[0094] The flow rate detected by the flow monitor (210) is converted into a signal that illuminates a display bar on the flow status indicator (232). A flow rate that is less than the reference airflow rate is displayed as abnormal operation on the flow status indicator (232), indicating an occlusion in the negative pressure system (10). Most commonly, a low flow rate condition is caused by a full waste collector (16), but other causes may include a



Solvetum-Exhibit 1002-0137

pinched or blocked tube (14) or blockage of the controlled vent (32, 34). A user can distinguish between a full collector (16) condition and a blocked tube (14) condition by viewing the flow status indicator (232) in combination with the error indicator (234) to determine if the level sensor (214) has indicated a full collector (16), as will be discussed below. A flow rate that is comparable to the reference airflow rate is displayed as normal operation on the flow status indicator (232), indicating an acceptable flow rate. For purposes of determining normal operation, a range is established about the reference airflow rate, such that a flow within that range is deemed normal and a deviation upward or downward outside that range is deemed abnormal. A flow rate that is higher than the reference airflow rate is displayed as abnormal operation on the flow status indicator (232), indicating a leak in the negative pressure system (10). Preferably, two levels of leak condition are indicated, a low level leak and a high level leak, to provide a gradated alert to the caregiver indicating the urgency with which the seal of the wound cover (22) must be addressed.

**[0095]** Referring particularly to Figure 5B, a preferred flow status indicator (232) for use in conjunction with the flow monitor (210) comprises a color-coded bar display having four differently colored regions to indicate four different status conditions. In particular, the bar display preferably includes regions to indicate low flow, normal reference airflow, low-level leak, and high-level leak. In the depicted embodiment, the bar display includes a region of blue LEDs (240) to indicate a flow rate lower than the reference airflow rate range, a region of green LEDs (242) to indicate a flow rate within the reference airflow rate range, a region of yellow LEDs (244) to indicate a flow rate at a low level above the reference airflow rate range, and a region of red LEDs (246) to indicate a flow rate at a high level above the reference airflow rate range. It is readily apparent that a wide variety of non-numerical indicators may be used to display three, four, or more status conditions, including but not limited to an arrow translating up and down a linear scale with demarcated regions, an arrow rotating around a circular scale with demarcated regions, a series of lights such that the number of illuminated lights indicates the status condition, one or more blinking lights such that the frequency of blinking indicates the status condition, and illuminated symbols representative of said flow ranges. Additionally, an audible indicator or alarm (238) may be used to indicate an abnormal operating condition, separately from or



Solvetum-Exhibit 1002-0138

in combination with a visual indicator. For example, a beeping or continuous tone may be used to indicate abnormal operation, with a different tone pitch, tone duration, or beeping frequency used to indicate each different abnormal condition, while a normal condition would be indicated by the absence of an alarm tone. An alarm silencer or alarm acknowledge button (239) is provided to silence the audible alarm (238) until the abnormal condition has been corrected.

[0096] The gradation of ranges of the flow status indicator (232) may be linear or non-linear and may be adjusted depending on the particular conditions in which the negative pressure wound treatment system is applied. In one embodiment, the reference airflow rate range is preferably defined as a ±10% band about the reference airflow rate, a low flow rate is defined as less than 90% of the reference airflow rate, a low-level leak flow rate is preferably defined as between 110% and 125% of the reference airflow rate, and a high-level leak flow rate is preferably defined as greater than 125% of the reference airflow rate. In another embodiment, where tighter flow rate control is desirable and possible, the reference airflow rate range is defined as a ±5% band about the reference airflow rate, a low flow rate is defined as less than 95% of the reference airflow rate, a low-level leak flow rate is defined as between 105% and 115% of the reference airflow rate, and a high-level leak flow rate is defined as greater than 115% of the reference airflow rate. Tighter flow control may be required, for example, where the wound being treated is smaller such that a low-level leak would be more likely to compromise the vacuum being applied to the wound dressing (12). In yet another embodiment, where less tight flow rate control is desirable and possible, the reference airflow rate range is defined as a ±15% band about the reference airflow rate, a low flow rate is defined as less than 85% of the reference airflow rate, a low-level leak flow rate is defined as between 115% and 130% of the reference airflow rate, and a high-level leak flow rate is defined as greater than 130% of the reference airflow rate. Less tight flow control may be desired, for example, where the wound being treated is larger such that a low-level leak would be less likely to compromise the vacuum being applied to the wound dressing (12). It is readily appreciated that each of the status condition ranges may be adjusted independently to optimize the characteristics of the flow status indicator (232) for a particular application.



Solvetum-Exhibit 1002-0139

[0097] In the embodiment shown in Figure 6, when the pump (103) is independently turned on and off by the pressure controller (202) to maintain setpoint pressure, the pressure sensed by the transducer (208) will oscillate between the upper control limit and the lower control limit. The period of this oscillation is related to the reference airflow rate, the normal rate of permeation through the wound cover (22), and any leakage in the wound dressing (12). Because the reference airflow rate and the normal rate of permeation through the wound cover (22) should be relatively constant, the higher the leakage in the wound dressing (12), the shorter the period of oscillation will be. Thus, the time intervals between the pump turning on or off can be detected by the flow monitor (210) and used as a rough measure of fluid flow rate through the system.

[0098] Where the pump motor speed is also controlled via a pulse width modulation (PWM) control to make the use of DC power more efficient, the flow monitor (210) can also correlate the on/off intervals with pulse rate to determine flow rate. In normal operation, the positive displacement pump (103) will output a given number of pulses for each revolution of the pump. The pulse signals can be supplied as an input to the flow monitor (210). These pulse signals can be used to determine the number of pumping strokes the pump (103) has performed over a period of time, and combined with the known volume of each pump stroke, can provide very close approximation of the pumped volume per time (i.e., volumetric flow rate). The flow monitor (210) continually counts the pulses being output from the pump (103), combined with the pressure measured by the transducer (208), to calculate the volume of air flow. When taken in combination with a time measurement, pump pulses per unit time represent the airflow rate. In a presently preferred embodiment, the time measurement is based on the off cycles of the pump motor: from the time the pump (103) turns off, until the next time the pump turns off, the flow monitor (210) counts the pulses and divides by the time between each motor off condition to determine the flow rate through the negative pressure system (10).

[0099] As discussed previously, abnormal conditions in the suction therapy system are detected as deviations from the expected flow (i.e., the reference airflow rate) through the system. In yet another embodiment, the reference airflow rate range is calibrated to a tolerance within approximately 50-100 cc/min higher or lower than the airflow produced by the calibrated vent (32, 34) on the end of the suction tube (14). A flow rate within this



Solvetum-Exhibit 1002-0140

range is denoted as normal operation. If the flow monitor (210) determines that the pump is not running at a normal duration to maintain the setpoint negative pressure, the flow status indicator (232) of the annunciator (230) provides a visual indicator and audible alarm to alert the caregiver. For a PWM controlled pump (103), an increase in the on-time of the motor (104) is proportional to increase of air flow in the system (10). The flow monitor (210) uses an algorithm to correct the air flow rate based on the actual pressure in the system (10). Any leak in the wound dressing (12) will require more flow to maintain the require suction level, such that the leak will be compensated for by an increase in the on-time of the pump (103). When the on-time increases to equate to a flow of approximately 3 liters per minute, the flow status indicator (232) provides a visual indicator to alert the caregiver to inspect and repair the leak in the wound dressing (12). If the caregiver is able to correct the leak, the visual indicator will turn off. If the fault condition is not addressed (by resealing the wound site) within a prescribed timeframe, preferably about one minute, the flow monitor (210) will cause the flow status indicator (232) to activate the audible alarm (238). Nevertheless, even when a leak condition exists, the pump (103) will continue to run as directed by the pressure controller (202), delivering some level of suction until the condition is corrected or the pump unit (102) is turned off.

**[0100]** The flow monitor (210) can also sense the loss or drop of flow below the reference airflow range. A drop in flow may be caused by various fault conditions, including the tubing (14) to the waste collector (16) becoming clogged with wound exudates, the tubing (14) being crimped shut by bending or squeezing, the waste collector (16) becoming full, and the filter (50) becoming occluded. These conditions also result in the loss of negative pressure at the wound. When a reduction in flow below the reference airflow range is sensed, and the flow status indicator (232) activates a visual indicator to alert the caregiver of a blockage condition.

Intermittent Suction Regime

**[0101]** It is sometimes desirable to provide suction in an intermittent fashion to benefit the healing process. Prior processes involve allowing the negative pressure system to vent to atmospheric pressure for a period of time to allow for reperfusion of tissue. However, allowing the system to completely vent to atmosphere results in a complete loss of suction on the wound dressing (12) and the resultant loss of any benefit that suction could play in



Solvetum-Exhibit 1002-0141

maintaining an airtight seal around the wound. The present invention solves this problem by varying the suction between two distinct levels: a first higher vacuum level selected by the pressure selector dial (206) and a second reduced vacuum level of 20-25 mm Hg. The selected higher level is used to apply the beneficial therapeutic effects of suction. The second reduced level is below capillary bed pressure, so reperfusion of tissues will occur in this lower setting, while the wound dressing (12) maintains at least some level of suction to help keep the dressing seals in place and to maintain the reference airflow, thus preventing reflux (by ensuring continuous one-way flow) and clotting in the system tubing. With this type of intermittent pump operation, the reference airflow should be selected such that it is maintained even at the reduced level, or else any annunciator (230) outputs associated with low airflow should be disarmed by the flow monitor (210) during reduced suction intervals as well as the ramp-up and ramp-down intervals.

**[0102]** To effect intermittent suction, the pressure controller (202) can cyclically reset the pressure setpoint between the selected pressure and the second reduced pressure. When the Mode Selector switch (204) is set to Intermittent mode, the programming in the therapy timing controller (224) uses a time interval for switching the pressure setpoint provided to the pressure controller (202) back and forth between the selected pressure and the second reduced pressure. In an embodiment, to enter the reduced pressure cycle of the intermittent mode, the therapy timing controller (224) activates a transistor that adds a resistance to the pressure controller circuitry, effectively resetting the pressure setpoint to the second reduced pressure.

Waste Collector Docking Station and Fill Indicator

**[0103]** As illustrated in the embodiment of Figures 5A and 5B, the pump unit (102) includes a docking station (160) for supporting the waste collector (16) which collects liquids aspirated from the wound. The waste collector (16) is disposed in the system between the wound dressing (12) and the pump (103). The waste collector (16) preferably comprises a transparent plastic canister (36) having right circular cylinder profile and fill-level markings along the height of the cylinder. The inlet connection (40) of the waste collector (16) is interconnected to the tubing (14) extending from the wound dressing (12), and the outlet fitting (54) of the waste collector (16) has an o-ring seal. The portable pump docking station (160) supports the waste collector (16). The docking station (160) has a



Solvetum-Exhibit 1002-0142

concave profile conforming to an external section of the collector (16) and a generally circular base (162) to support the waste collector (16) when docked. The pump unit (102) includes a releasable latch fitting (164) in an upper wall of the docking station (160) that is adapted to receive the connection fitting (54) of the waste collector (16). The fitting (54) is inserted into the latch fitting (164) and latched in place. The waste collector (16) may be released and removed from the docking station (160) by depressing the release button (166) to release the fitting (54) from the latch fitting (164).

**[0104]** The pump unit (102) provides the ability to detect a filled waste collector (16) without the need to measure differential pressures across the membrane (50), as is required in existing systems. Differential pressure measurement can be problematic because partially clogged membranes can lead to erroneous readings and interpretations. In a preferred embodiment, the pump unit (102) employs positive level detection as a direct indication of the fill status of the waste collector (16). In particular, the pump unit (102) may include a level sensor (214) proximate to the docking station (160) for detecting when the level of waste in the collector (16) equals or exceeds a level which indicates a filled collector condition. The level sensor (214) can take many forms, such as capacitance, optical, ultrasonic, contact wire, float, and others similar sensing mechanisms. A preferred level sensor (214) is a capacitance detector such as a Model# BC 10-QF5 sensor manufactured by Turck, Inc. The level sensor (214) can be positioned in the pump unit (102) at a desired level proximate to the docking station (160) and has the ability to read a change in capacitance as caused by the presence of an ionic fluid. A capacitance level sensor is capable of sensing capacitance through surfaces such as the wall of the canister (36), so no elements of the sensor (214) are exposed to the wound exudate. Capacitance type detection is also tolerant to conditions such as mist or fogging.

**[0105]** Direct level detection by the level sensor (214) also allows differentiation between a filled waste collector (16) and an occluded condition such as blockage in the tubing (14) that may result in a deviation from the reference airflow range. Based on a signal provided by the direct level sensor (214) to the error detector (216), the error indicator (234) of the annunciator (230) can illuminate a visual indicator and/or an audible alarm distinct from the flow status indicator (232) used to display normal or abnormal flow



Solvetum-Exhibit 1002-0143

conditions. Providing the clinician a distinction between filled waste collector condition and an occlusion makes the system easier to use and less prone to user error.

[0106] Since the patients may be mobile or need to be transported, there is a potential that agitation and motion can create artifact where fluid may splash and cause a false positive indication of a filled waste collector (16) and subsequently trigger an unwarranted signal or alarm. An algorithm may be used by the error detector (216) to minimize the likelihood of this false indication. The algorithm incorporates a time delay and a sampling rate. For example, a sampling rate of 10 milliseconds and a delay of 4 seconds has been shown to be an effective set of parameters for reducing false full indications due to the motion artifact. Preferably the algorithm is programmed into the error detector (216) of the pump unit controller (200).

Timing Subsystem and Compliance Monitor

[0107] The pump unit controller (200) may have a timing subsystem (218) for recording and accumulating time units corresponding to periods of time when the pump (103) is running. Preferably the timing subsystem (218) records and accumulates the pump operating time units based upon inputs from various sensors. For example, the timing can be started and stopped by signals from the Mode Selector switch (204), or signals that can detect when the pump is running from the tachometer (212) or other sensor. The timing subsystem (218) preferably is capable of providing time reports of the time history of operation of the pump (103). The time reports may include a record of runtime intervals, a record of the date and duration of runtime intervals, a record of total accumulated runtime, a record of accumulated compliant runtime, and a record of runtime remaining on a preset runtime period.

[0108] The timing subsystem (218) of the pump unit controller (200) may include an onboard compliance monitor as part of the timing function. A compliance indicator (236) alerts the caregiver to deviations from the normal application of suction to the wound over time and is a useful adjunct to the application of negative pressure wound therapy. The compliance monitor may compute the number of hours that suction has been within ±5 mm Hg of a pressure setpoint. Medical experience has shown that suction is preferably applied for 22 of any 24 continuous hours to be effective. The compliance indicator (236) can show



Solvetum-Exhibit 1002-0144

and record in numerous ways the number or percentage of compliant hours of suction therapy for a given therapy period.

[0109] The timing subsystem (218) may be connected to alarms which indicate abnormal operating conditions due to leak or occlusion. The timing subsystem (218) may also be used to indicate time remaining until scheduled maintenance or cleaning, or to indicate time used or remaining on a billing plan where the payments for usage are based upon time units either on return or pre-paid in advance. When the pump unit (102) is sold or leased in this manner, the timing subsystem (218) has the ability to record and accumulate time units corresponding to periods of time when the pump (103) is running and for providing reports of runtime, including compliant runtime when the wound treatment system (10) is operating normally.

Error Detection and Display

[0110] The pump unit (102) may include warning or caution lights indicating pump operating parameters, or errors other than those that are detected by deviations from the reference airflow rate. Numerous combinations of visual and audible indicators may be sued to display such status, fault, or error conditions. In the schematic embodiment of Figure 6, a visual error indicator (234), separate from the flow status indicator (232), provides additional trouble shooting assistance. Various errors may be detected based on sensor signals received by the error detector (216). The error indicator (234) preferably includes an alphanumeric error display, and the error detector (216) can cause the error display to provide indications that correlate to at least following errors: overpressure (i.e., suction exceeding a prescribed limit), missing waste collector, pressure transducer failure, low battery, low operating time remaining, and attachment of incorrect power supply.

[0111] Overpressure is the condition where a runaway pump (103) could cause potentially high negative pressures to be delivered to the patient. The error detector (216) continually polls the output of the pressure transducer (208) and compares it to a stored maximum allowable pressure. If the maximum allowable pressure is exceeded for a predetermined time period, then the pressure controller (202) causes the pump (103) to stop operating and an overpressure error is indicated on the error indicator (234).



Solvetum-Exhibit 1002-0145

[0112] A missing waste collector condition occurs if the pump (103) is activated without a waste collector (16) installed in the docking station (160) and connected to the latch fitting (164). This condition can occur at startup or during operation, and is detected by the error detector (216) as flow through the system exceeding a certain level without a corresponding minimal increase in pressure. The threshold flow rate for detecting a missing waste collector is typically set to be greater than the increased flow that would be expected from a wound dressing that was removed or compromised. When so detected, a missing waste collector error is indicated on the error indicator (234).

[0113] A pressure transducer failure can take two forms: an excessively high reading indicative of high vacuum or an open circuit (no pressure reading). A high vacuum reading would be interpreted as an overpressure condition, as described above, and would result in a fail-safe deactivation of the pump (103). An open circuit failure appears as zero pressure output, so if the error detector (216) detects air flow but zero pressure, a transducer failure error is indicated on the error indicator (234).

[0114] A low battery charge is determined by the error detector (216) polling the battery output voltage when the pump unit (102) is not plugged into an external electrical power source. When a threshold low voltage level is crossed, a low battery error is indicated on the error indicator (234).

[0115] Low operating time remaining is associated with the timing feature of the pump unit controller (200) when it is used to indicate time remaining until scheduled maintenance service or time remaining on a pre-paid rental plan. The timing system (218) constantly accumulates runtime and time remaining to a target time, such as the number of pre-paid hours. The error detector (216) can be set to a time remaining threshold, such that when the accumulated time indicates that time remaining has dropped below the threshold, a low time error is indicated on the error indicator (234).

[0116] Incorrect power supply detection is to guard against providing excessive voltage to the system. This is accomplished by comparing the input voltage to a set maximum level and detecting if voltage exceeds the maximum level. The error detector (216) detects the



Solvetum-Exhibit 1002-0146

excess voltage and shuts down the pump (103), and an incorrect power error is indicated on the error indicator (234).

Collection Line Pulse System

[0117] The pump unit (102) may include a collection line pulse feature to ensure that the collection line is maintained as clear as practical to minimize the amount of fluid in the line and ensure accurate delivery of the negative pressure. When the flow monitor (210) begins to detect a deviation from the reference airflow rate so as to indicate an occlusion, the pressure controller (202) can temporarily reset the pressure setpoint temporarily to a pressure higher than the selected pressure, causing the pump (103) to start or to increase in speed. This pump activation or acceleration causes a pressure pulse of transient high negative pressure in the system conduit to clear the tube (14) between the wound dressing (12) and the waste collector (16). The pressure pulse is initiated prior to the illumination of an occlusion indication on the flow status indicator (232). An occlusion indication will not occur if the pressure pulse is followed by decay in the pressure measured by the pressure transducer (208), because a decay in pressure would indicate a cleared collection line and the absence of an occlusion. Once the flow monitor (210) again detects a normal fluid flow rate, the pressure controller (202) resets the pressure setpoint to the selected pressure.

Additional Features

[0118] In order to enhance safety of the negative pressure wound therapy system (10), the pressure controller (202) can operate independently of the flow monitor (210) and error detector (216) in the pump unit controller (200). This provides a measure of system redundancy in the event that one or the other function should fail. Should the pressure controller (202) fail, the flow monitor (210) and/or error detector (216) are capable of shutting down the pump unit (102), and should the flow monitor (210) fail, the pressure controller (202) will continue to provide suction to the wound.

[0119] The pump unit (102) may have a charcoal filter element (not shown) for controlling odors that may emanate from the patient through the pump (103). This element is placed on the outlet of the pump (103) and can be readily changed and replaced. Also, desiccants can be used in conjunction with the filter to minimize moisture in the exhaust from the pump (103).



Solvetum-Exhibit 1002-0147

[0120] Positive displacement pumps typically employ check valves which make noise. Accordingly, the pump unit (102) may employ a backpressure device in the form of a leaf spring (not shown) that is placed over the outlet of the pump (103) to reduce the noise emanating from the pump check valves.

**Flow Measurement Alternatives**

[0121] There are other devices for determining the flow through the system that could be employed as leak detection devices in a wound dressing system operating with a reference airflow. These devices measure flow directly, and thus can be used with non-positive displacement pumps and wall vacuum sources as well as with positive displacement pumps. As shown in Figure 7, a target meter (120) is a reliable device for flow detection that is insensitive to changes in pressure. The target meter (120) employs an inlet orifice (122) and a target (124) typically placed in close proximity to the orifice. The target is attached to a shaft (126) and pivots on points (128) or an armature. A light torsion spring (not shown) may be used to keep the target in close proximity to the orifice. The extension of the shaft is placed outside of the flow path. As flow enters the orifice, the target is forced away from the orifice. A proximity sensor, such as a reed switch (130) is so placed as to detect the positions of a magnet (132) on the end of the shaft extension and thus the presence or absence of flow in the circuit as well as measuring flow rate. A target meter could be placed between the waste collection canister and the pump or at the outlet of the pump, or between the waste collection canister and a stationary suction source to provide analogous flow rate information as previously described.

[0122] Other flow detection devices that could be used alone or in conjunction with a suction source include a hot wire anemometer that determines flow as a function of the cooling of a wire in a flowing air stream, a rotameter with an optical detector that senses the position of a float, a turbine meter that rotates when flow is applied. These flow detection systems are generally insensitive to changes in pressure. A hot wire anemometer could be placed between the waste collector (16) and the pump (103) or at the inlet of the pump (103), or between the waste collector (16) and or a stationary suction source. These alternative flow sensors allow the use of other styles of pumps that are not positive displacement, such as vane pumps and scroll pumps. Almost any flow instrument could be



Solvetum-Exhibit 1002-0148

used, including, for example, differential pressure (DP) cells that provide an indirect measure of flow rate.

[0123] When any fault condition is determined within the system, the pump (103) will continue to run, delivering a sub-optimal level of suction, until the condition is corrected or the user powers the system off, since a sub-optimum level of suction applied to the wound is preferable to no suction at all.

**Therapeutic Fluid Delivery and Reference Airflow**

[0124] In the embodiments described above, the reference airflow for discerning between normal and abnormal operation has been ambient air supplied to the suction conduit through a vent. A reference airflow could be provided, however, in the form of a therapeutic mixture, such as oxygen enriched air, nitric oxide, heated humidified air or an aerosol containing medication droplets or particles. Such a configuration is shown in Figure 8. A source of therapeutic mixture (150), such as an oxygen regulator or a nebulizer, is connected to a conduit (152) leading to the wound. The mixture is conveyed through the conduit under or through the wound cover (122) and released into the wound packing (124) adjacent the wound contact material (126). Part of this mixture will be absorbed, but enough could be returned through the suction conduit (114) to provide a reference airflow when the flow has settled into equilibrium.

[0125] While a flow monitor (210) could be associated with a portable pump unit (102) or in front of the appliance fitting of a suction regulator (20), as described above, an airflow monitor (154) could be provided between the therapeutic mixture source (150) and the wound cover (122). Since the part of the conduit beneath the cover would be contaminated in use, a detachable disposable tube (156) would be used for the section of conduit from the monitor (154) to the wound packing (112). Thus, the invention can provide for the maintenance of suction therapy on a wound as well as the ability to monitor the application and removal of therapeutic substances to the wound.

[0126] Although the invention has been described and illustrated with respect to several embodiments described above, it should be understood the invention may be embodied in other forms without departing from its scope or attributes. Hence, the scope of the



Solvetum-Exhibit 1002-0149

invention should be derived from the claims that follow, recognizing that the claim language may literally encompass structure not specifically described.



Solvetum-Exhibit 1002-0150

## Claims

We claim:

1. A pump for applying suction to a wound in a negative pressure wound therapy system, the pump comprising a flow monitor to monitor fluid flow rate in a system conduit from a wound dressing to the pump as indicative of a level of negative pressure applied to a wound, the flow monitor detecting whether or not the flow rate deviates from a reference airflow rate, the flow monitor comprising a gradated non-numerical visual annunciator to indicate flow conditions including that the flow rate is below the reference airflow rate range so as to indicate an occlusion in the system, that the flow rate is within the reference airflow rate range so as to indicate normal operation, that the flow rate is at a first level above the reference airflow rate range so as to indicate a first level of leakage in the system, or that the flow rate is at a second level above the reference airflow rate range so as to indicate a second higher level of leakage in the system, the second level being a greater deviation from the reference airflow than the first level.

2. A pump as in claim 1, wherein the gradated annunciator comprises a color-coded bar meter for displaying a different color corresponding to each flow condition.

3. A pump as in claim 1, wherein the pump is a positive displacement pump.

4. A pump as in claim 1, further including:

an error detector for detecting one or more system errors that are not associated with a deviation of flow rate from the reference airflow; and

an error indicator for displaying a visual warning of system errors detected by the error detector.

5. A pump as in claim 1, further comprising:

a pressure transducer for sensing pressure in the system; and

a pressure controller for controlling the pump to maintain the system pressure between an upper limit and a lower limit around a pressure setpoint, wherein the pressure controller can control the pump without input from the flow monitor.

6. A pump as in claim 5, the pressure controller further comprising a timer for periodically resetting the pressure setpoint between a user-selected pressure and a second



Solvetum-Exhibit 1002-0151

pressure lower than the user-selected pressure for providing intermittent negative pressure therapy to the wound.

7. A pump as in claim 5, wherein the pressure controller further receives an input from the flow monitor when the flow monitor begins to detect a deviation of the flow rate below the reference airflow rate that indicates an occlusion in the system, such that the pressure controller causes the pressure setpoint to temporarily increase above the user-selected pressure, causing the pump to start or to increase in speed to create a negative pressure pulse capable of clearing the system conduit between the wound dressing and the waste collector.

8. A pump as in claim 7, wherein the pressure pulse is initiated prior to the gradated indicator providing indication of an occlusion, and wherein the gradated indicator will not provide an indication of an occlusion if the negative pressure pulse is followed by a decay in the pressure.

9. A pump as in claim 1, further comprising:

a waste collector located in the system between the wound dressing and the flow monitor for collecting liquids aspirated from the wound;

a docking station for releasably supporting the collector; and

a level sensor proximate to the docking station for detecting the level of waste in the collector.

10. A pump as in claim 9, wherein the level sensor is a capacitance detector.

11. A pump as in claim 9, wherein the level sensor is an optical detector.

12. A pump as in claim 9, wherein the level sensor provides a signal representing a level of waste in the collector and an algorithm is applied to the signal to reduce the likelihood of an erroneous indication of a full collector when the collected waste is sloshed.

13. A pump as in claim 9, wherein the gradated annunciator is further capable of providing visual indication of a full collector.

14. A pump as in claim 1, further comprising a timing subsystem to record and accumulate time units based upon inputs from various sensors.



Solvetum-Exhibit 1002-0152

15. A pump as in claim 14, wherein the timing subsystem is further capable of providing reports of time histories of pump operation including one or more reports chosen from the group consisting of: a record of runtime intervals, a record of the date and duration of runtime intervals, a record of total accumulated runtime, a record of accumulated compliant runtime, and a record of runtime remaining on a preset runtime period.

16. A system for applying negative pressure therapy to a wound, comprising:

a wound dressing including a wound cover that is sealable to skin surrounding a wound;

a portable suction pump powered by a battery or by an alternating current electrical power supply, the pump comprising a flow monitor to detect the flow rate in the conduit;

a conduit having an end operatively associated with the wound dressing and an opposite end operatively associated with the suction pump, to communicate suction to the wound; and

a waste collector disposed in the conduit between the wound dressing and the suction pump for collecting liquids aspirated from the wound, the waste collector being releasably supported by a docking station on the pump;

wherein the pump includes a sensor proximate to the docking station for detecting the level of waste in the collector; and

wherein the flow monitor comprises a non-numerical annunciator capable of providing visual indications of flow conditions including that the flow rate is below the reference airflow rate range so as to indicate an occlusion in the system, that the flow rate is within the reference airflow rate range so as to indicate normal operation, that the flow rate is at a first level above the reference airflow rate range so as to indicate a first level of leakage in the system, that the flow rate is at a second level above the reference airflow rate range so as to indicate a second higher level of leakage in the system, the second level being a greater deviation from the reference airflow rate than the first level, or that the waste collector is full.

17. A system as in claim 16, further comprising:

a pressure transducer for sensing pressure in the system; and

a pressure controller for controlling the pump to maintain the system pressure between an upper limit and a lower limit around a pressure setpoint.



Solvetum-Exhibit 1002-0153

18. A system as in claim 16, further including an error indicator for displaying a visual warning of one or more system errors that are not associated with a deviation of flow rate through the pump from the reference airflow rate, wherein the system errors are chosen from the group consisting of: overpressure detected by the pressure transducer, pressure transducer failure, waste collection canister not attached, low battery voltage, attachment of incorrect power supply, low operating time remaining, collection canister full, and pump motor not operational.

19. A method for applying suction to a wound in a negative pressure wound therapy system comprising:

providing a suction pump;

providing a pressure transducer for sensing pressure in the system;

controlling the pump to maintain the system pressure between an upper limit and a lower limit around a pressure setpoint;

providing a flow monitor to monitor fluid flow rate in the system and to detect whether the flow rate deviates from a reference airflow rate; and

providing a gradated non-numerical visual annunciator to indicate flow conditions including that the flow rate is below the reference airflow rate range so as to indicate an occlusion in the system, that the flow rate is within the reference airflow rate range so as to indicate normal operation, that the flow rate is at a first level above the reference airflow rate range so as to indicate a first level of leakage in the system, or that the flow rate is at a second level above the reference airflow rate range so as to indicate a second higher level of leakage in the system, the second level being a greater deviation from the reference airflow than the first level.



Solvetum-Exhibit 1002-0154

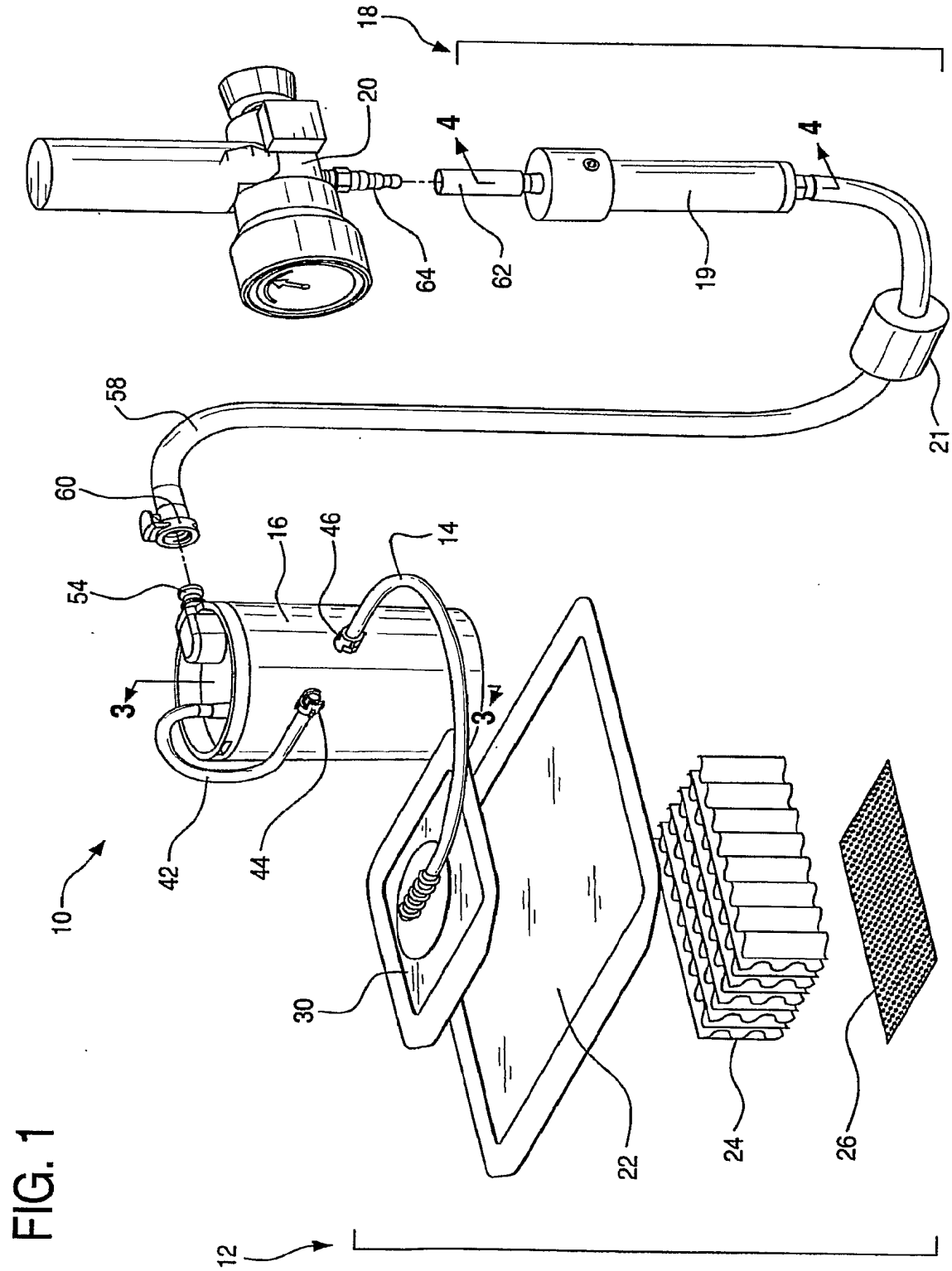



FIG. 1

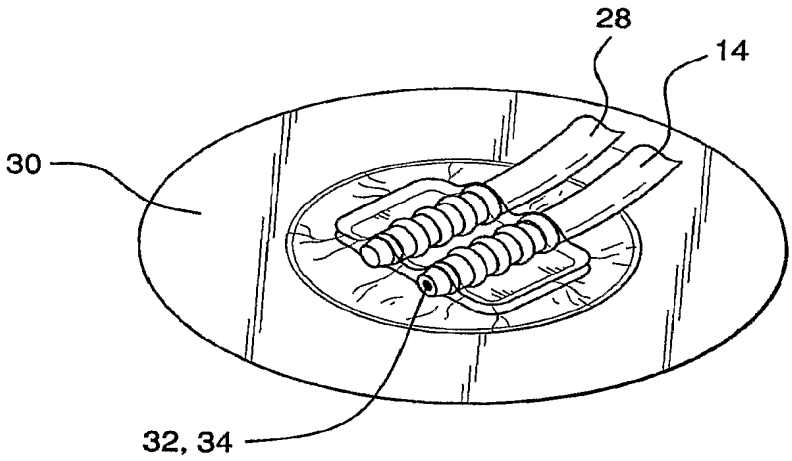



FIG. 2

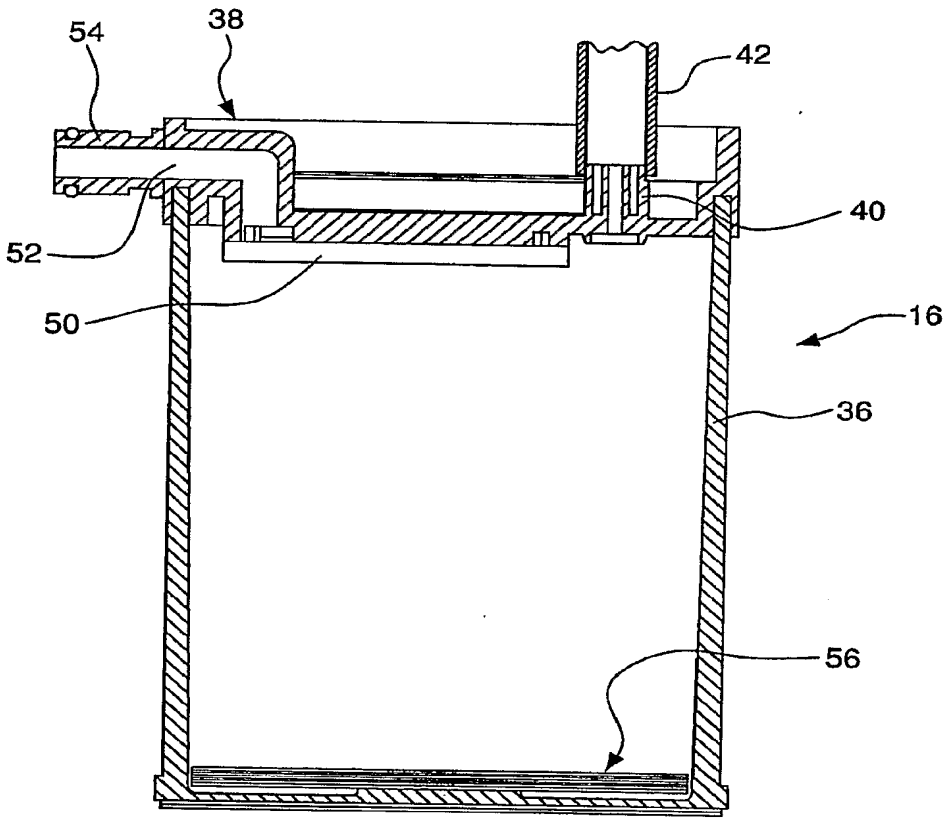



FIG. 3

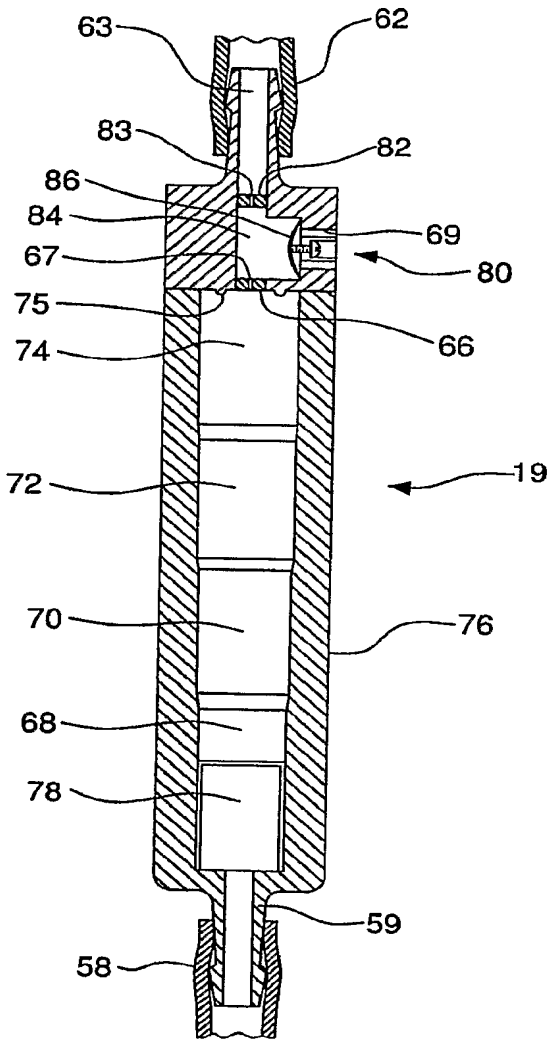



FIG. 4

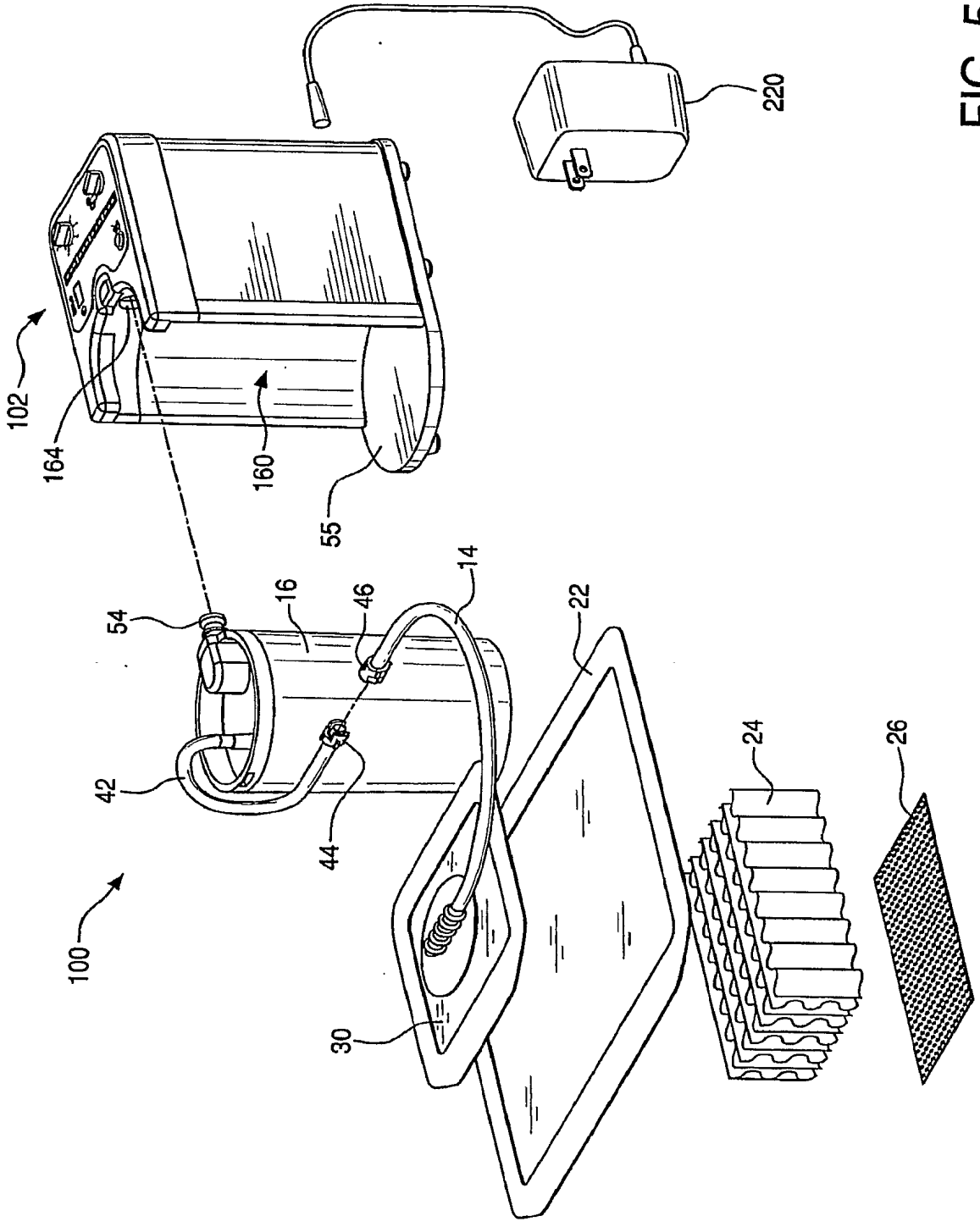



FIG. 5A

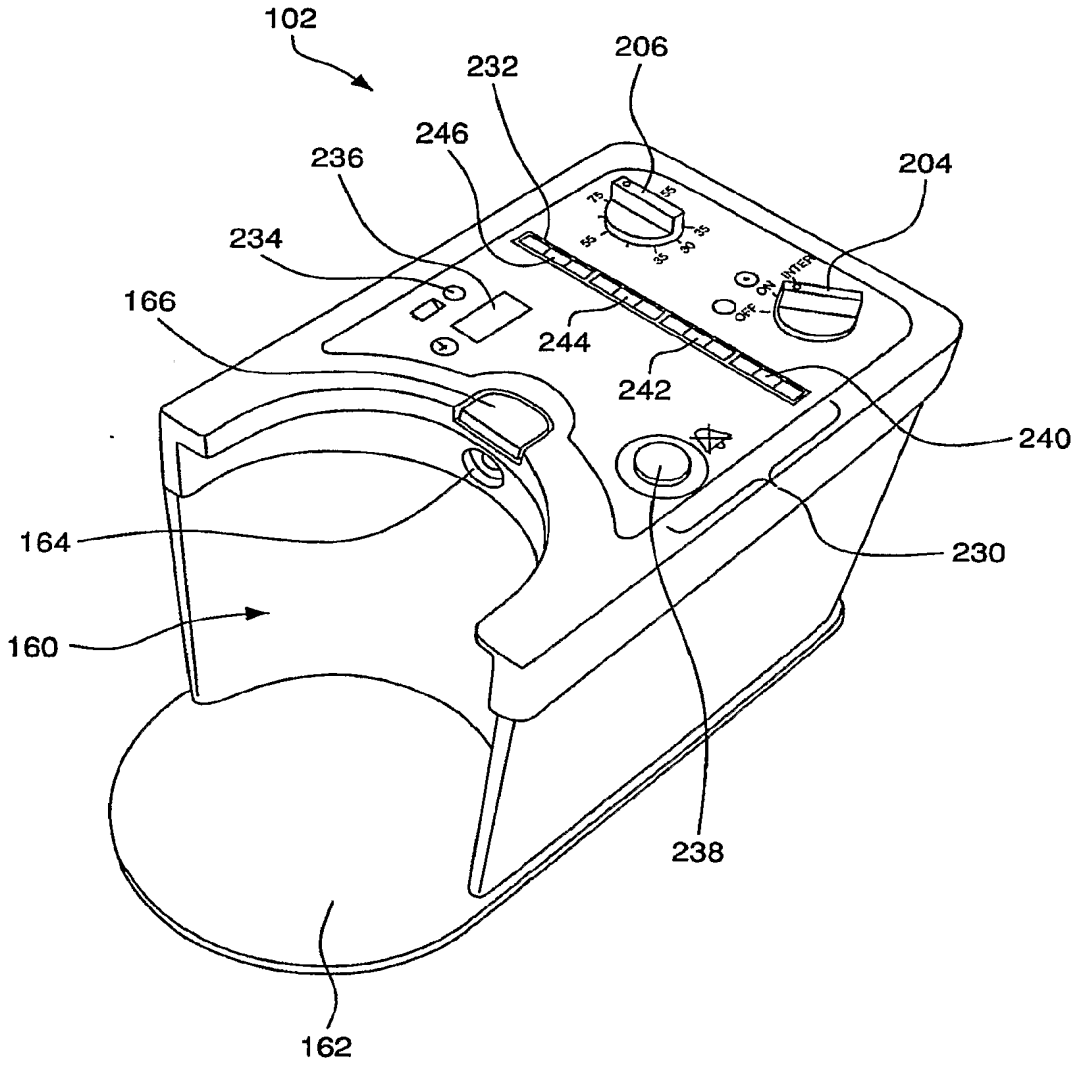



FIG. 5B

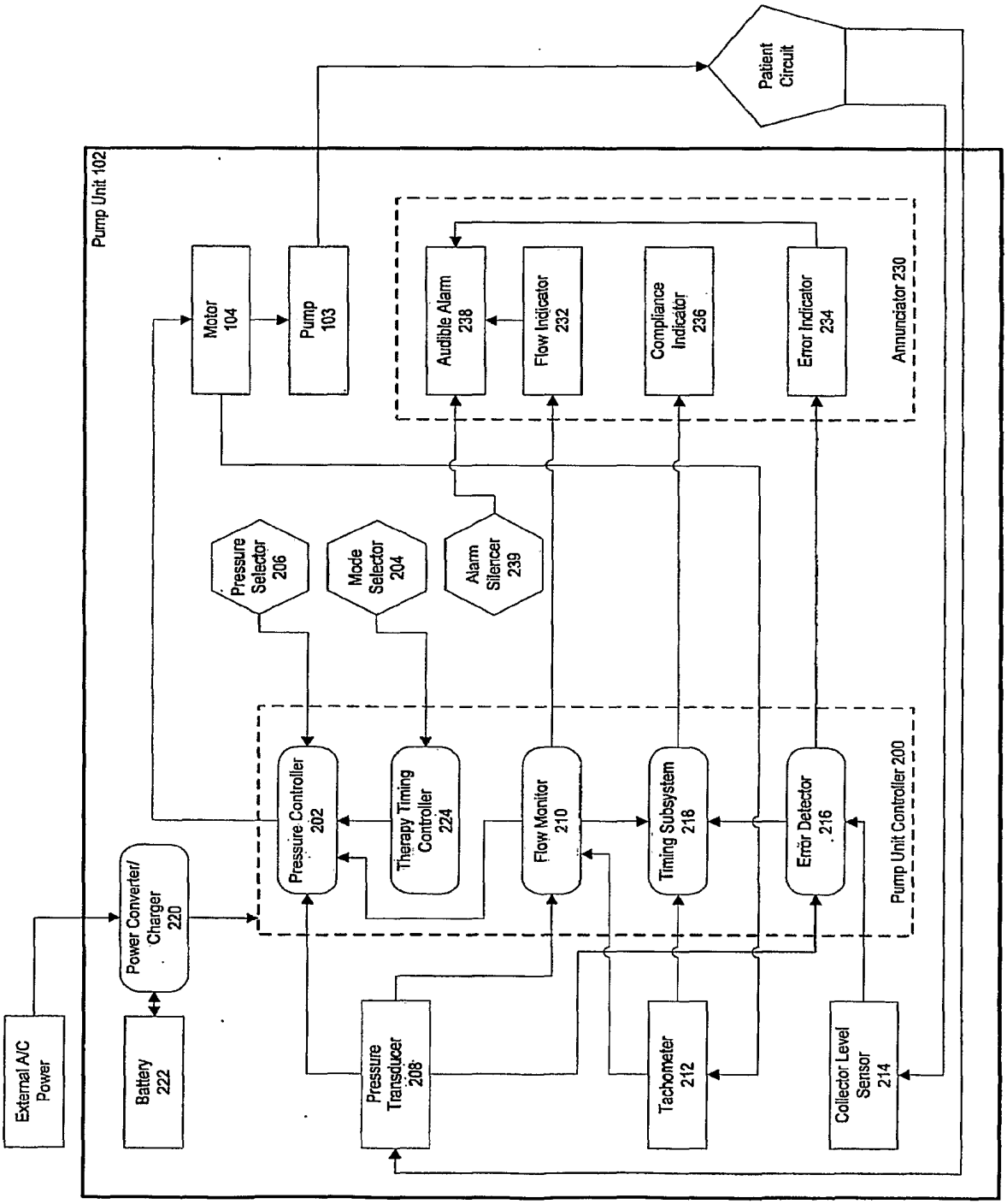

Patient Circuit
Pump Unit 102
Motor 104
Pump 103
Audible Alarm 238
Flow Indicator 232
Compliance Indicator 236
Error Indicator 234
Annunciator 230
Pressure Selector 206
Mode Selector 204
Alarm Silencer 239
Pressure Controller 202
Therapy Timing Controller 224
Flow Monitor 210
Timing Subsystem 218
Error Detector 216
Pump Unit Controller 200
Power Converter/ Charger 220
External A/C Power
Battery 222
Pressure Transducer 208
Tachometer 212
Collector Level Sensor 214

FIG. 6

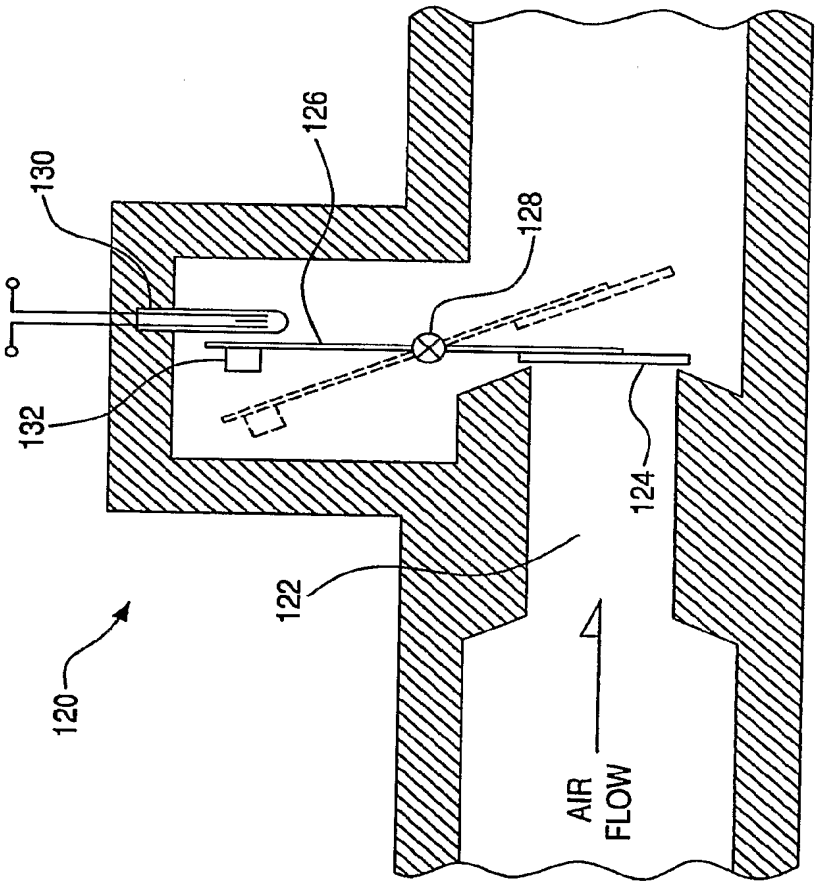



FIG. 7

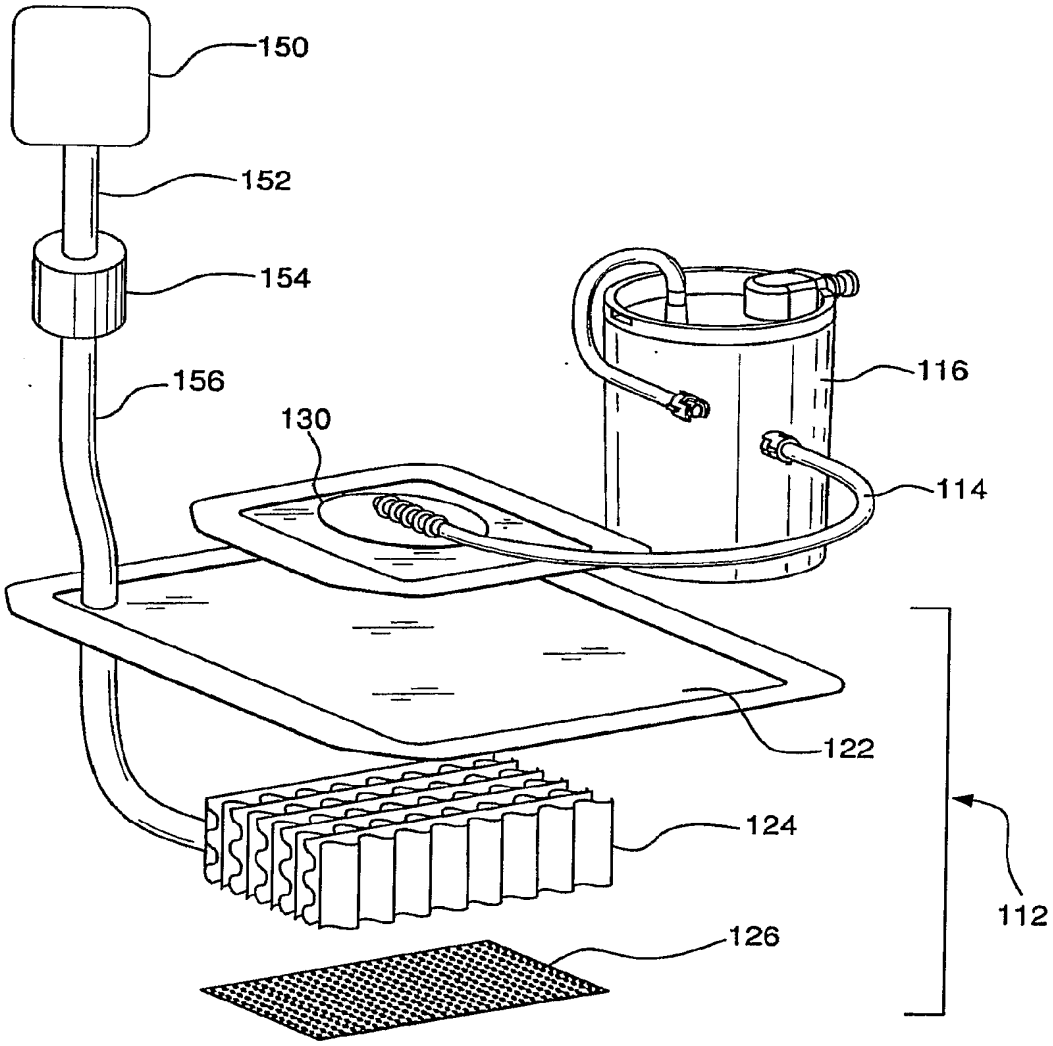



FIG. 8

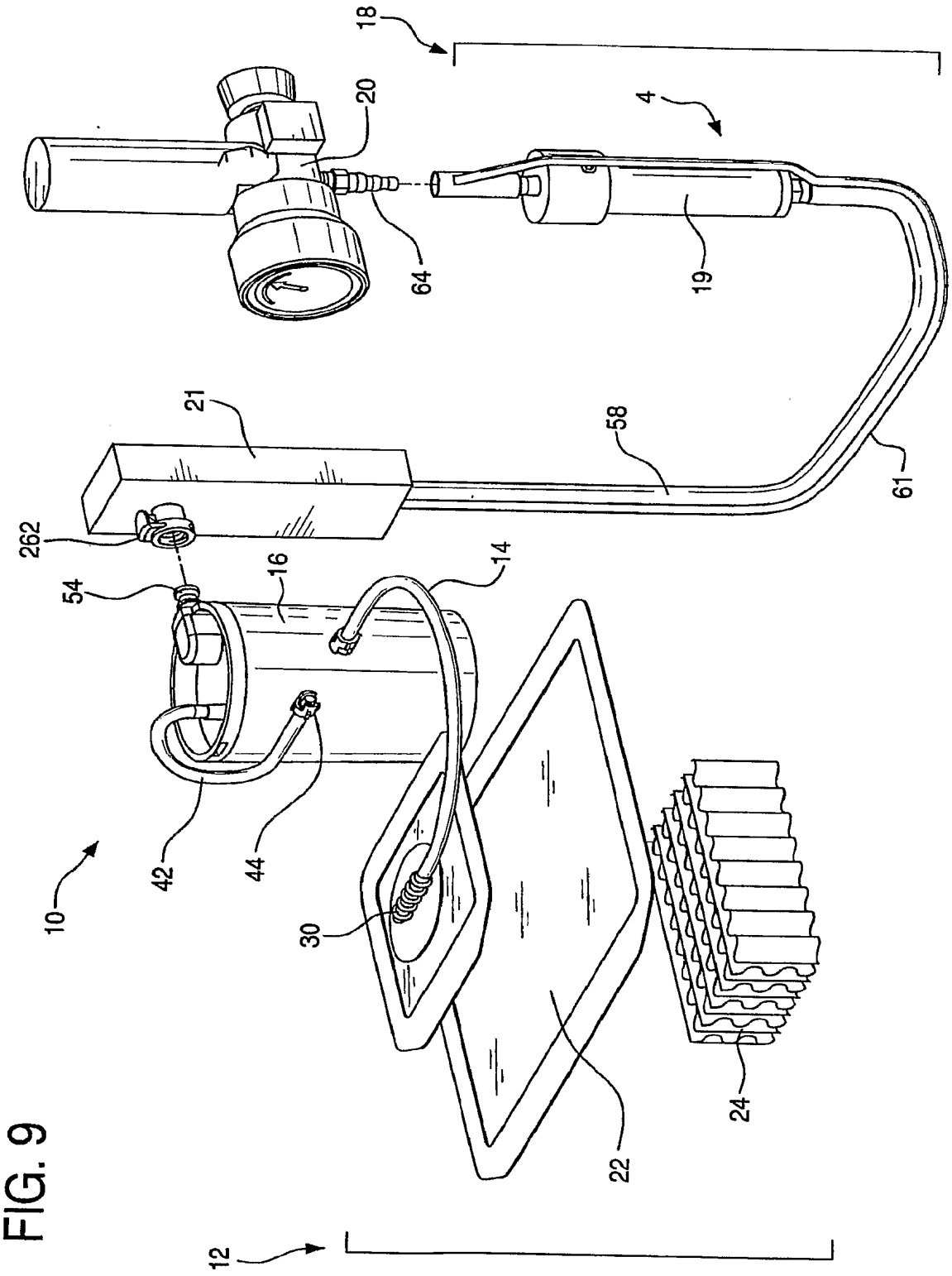



FIG. 9

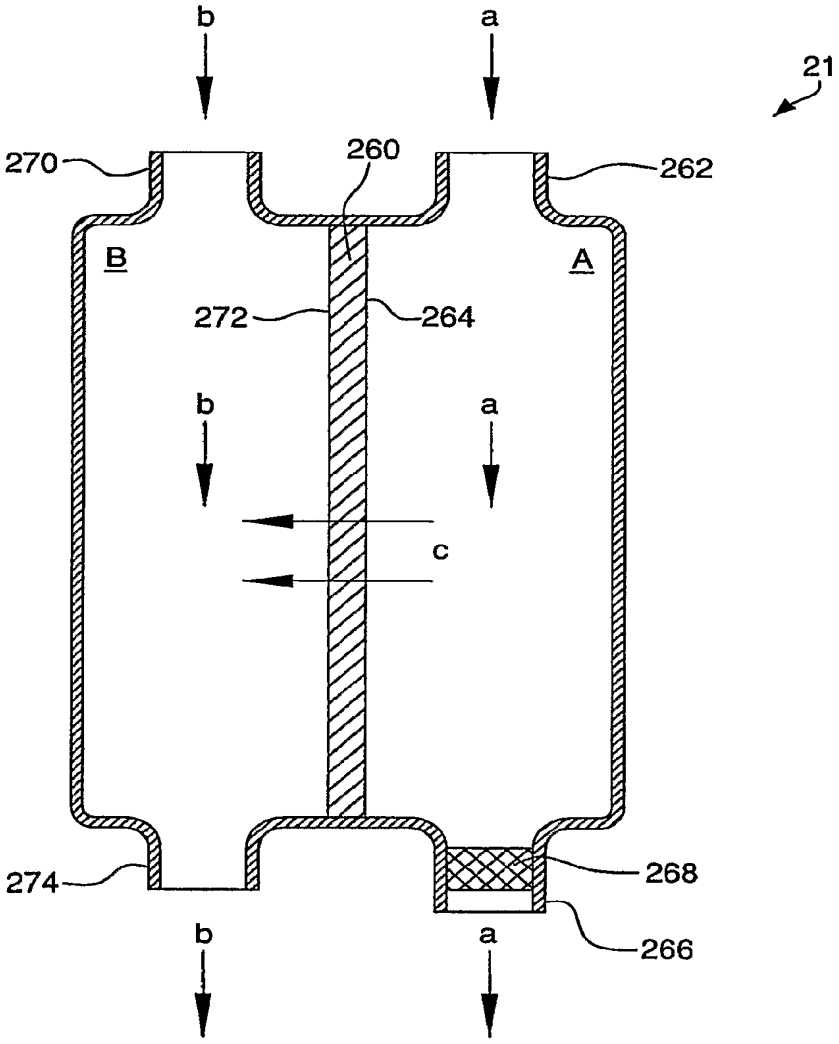



FIG. 10

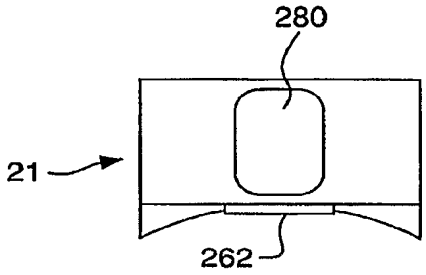
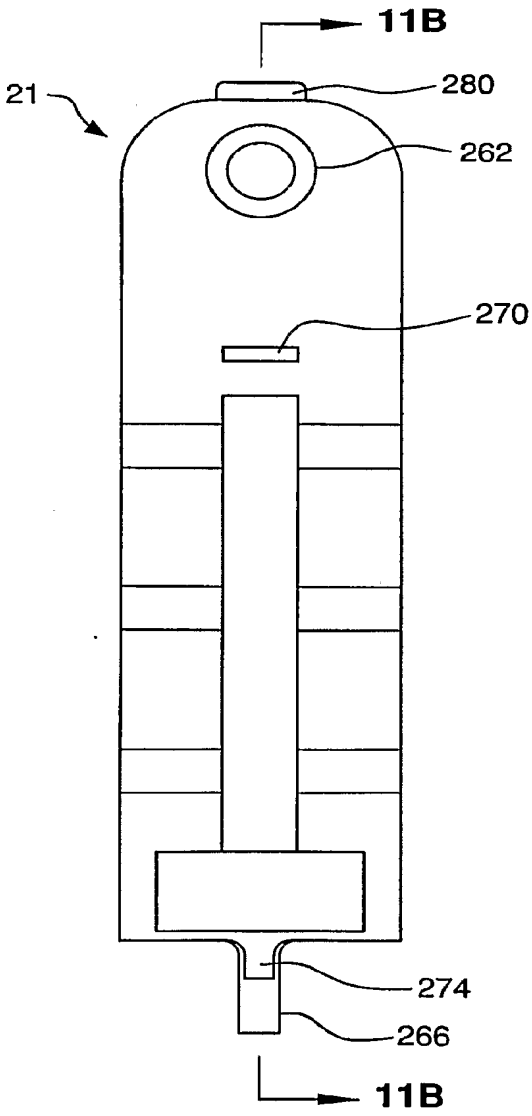



FIG. 11C




IG. 11A

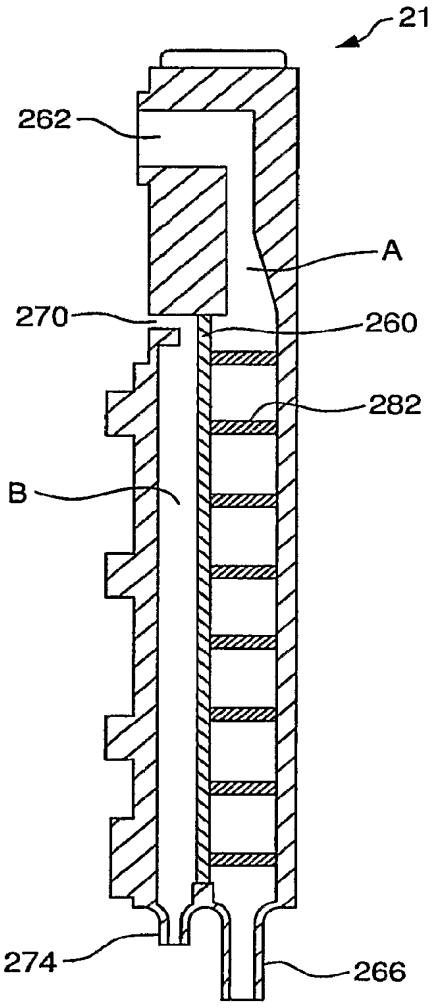



FIG. 11B

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 16563172 |
| **Application Number:** | 13917865 |
| **International Application Number:** | |
| **Confirmation Number:** | 7555 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Customer Number:** | 1444 |
| **Filer:** | Roger Lowen Browdy/Michael Stanwyck |
| **Filer Authorized By:** | Roger Lowen Browdy |
| **Attorney Docket Number:** | ADAHAN16A |
| **Receipt Date:** | 12-AUG-2013 |
| **Filing Date:** | 14-JUN-2013 |
| **Time Stamp:** | 15:09:35 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | 2013-08-12IDSForm.pdf | 612217<br>de1e5f74edba38c7a6359aecaae39001f3e84794 | no | 4 |

| | |
|---|---|
| **Warnings:** | |
| **Information:** | |

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|---|---|---|---|---|---|
| 2 | Foreign Reference | WO2008039223A1.pdf | 2516655<br>0dcbb6a3718a5e4c37db7ceb19cd1082f8b4a871 | no | 54 |
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| **Information:** | | | | | |
| 3 | Foreign Reference | WO2008039314A2.pdf | 2702115<br>b8b67eafebbc83f3ca5cdd7a95d70236390737dc | no | 57 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | | **Total Files Size (in bytes):** | 5830987 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A |

**CONFIRMATION NO. 7555**

**PUBLICATION NOTICE**

1444
Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

*OC000000064582737*

**Title:**WOUND CLOSURE AND DRAINAGE SYSTEM

**Publication No.**US-2013-0281986-A1
**Publication Date:**10/24/2013

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

1444 7590 03/11/2014

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

| EXAMINER | |
|---|---|
| TREYGER, ILYA Y | |
| ART UNIT | PAPER NUMBER |
| 3761 | |
| MAIL DATE | DELIVERY MODE |
| 03/11/2014 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



Solvetum-Exhibit 1002-0170

| Office Action Summary | Application No. 13/917,865 | Applicant(s) ADAHAN, CARMELI | |
|---|---|---|---|
| | Examiner ILYA TREYGER | Art Unit 3761 | AIA (First Inventor to File) Status No |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06/14/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5)☒ Claim(s) *1-22* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-22* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *06/14/2013* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *08/12/2013; 06/14/2013*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

1. The present application is being examined under the pre-AIA first to invent provisions.

## DETAILED ACTION

2. Claims 1-22 of the US Patent Application No. 13/917865 filed 06/14/2013 are presented for examination.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit http://www.uspto.gov/forms/. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

4. Claims 1-22 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 6, 8, 9, 20 and 24 of U.S. Patent No. 8,506,554 in view of Argenta et al. (US 2001/0029956).

5. All the limitations of claims 1 and 11 of the Application are to be found in clam 1 of the Patent. The difference is that claim 1 of the Patent does not comprise the controller configured for controlling operation of the vacuum source.

Argenta teaches a wound treatment apparatus (fig. 1) comprising control device 44 (page 4, [0037], line 3; fig. 1) configured for controlling peration of the vacuum source (page 4, [0037], line 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the device of the Patent with the controller, as taught by Argenta in order to control the pump, as motivated by Argenta (page 2, [0010], lines 18-19).

6. All the limitations of claim 19 of the Application are to be found in clam 1 of the Patent. The difference is that claim 1 of the Patent does not comprise the step of controlling the vacuum source.

Argenta teaches a method of wound treatment (Abstract, line 1) comprising a step of controlling the vacuum source (page 3, [0028], line 4-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the method of the Patent with the step of controlling the vacuum source, as taught by Argenta in order to control the pump, as motivated by Argenta (page 2, [0010], lines 18-19).

7. All the limitations of claim 2 of the Application are to be found in claim 1 of the Patent.

8. All the limitations of claims 4 and 5 of the Application are to be found in claim 8 of the Patent.

9. All the limitations of claims 9 and 17 of the Application are to be found in claim 6 of the Patent.

10. All the limitations of claims 10, 18 and 22 of the Application are to be found in claim 24 of the Patent.

11. All the limitations of claim 13 of the Application are to be found in claim 9 of the Patent.

12. All the limitations of claim 14 of the Application are to be found in claim 20 of the Patent.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILYA TREYGER whose telephone number is (571)270-3217. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tatyana Zalukaeva can be reached on 571-272-1115. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ILYA TREYGER/
Examiner, Art Unit 3761
/TATYANA ZALUKAEVA/
Supervisory Patent Examiner, Art Unit 3761

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 13917865 |
| Filing Date | 2013-06-14 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | 3761 |
| Examiner Name | /Ilya Treyger/ |
| Attorney Docket Number | ADAHAN16A |

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| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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|---|---|---|---|---|---|---|---|---|
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Solvetum-Exhibit-1002-0176

| Receipt date: 08/12/2013 | Application Number | 13917865 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-14 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | | ☐ |

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**EXAMINER SIGNATURE**

| Examiner Signature | /Ilya Treyger/ | Date Considered | 03/03/2014 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

Solvetum-Exhibit-1002-0177

| Receipt date: 08/12/2013 | Application Number | 13917865 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-14 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Ronni S. Jillions/ | Date (YYYY-MM-DD) | 2013-08-12 |
|---|---|---|---|
| Name/Print | Ronni S. Jillions | Registration Number | 31,979 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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Solvetum-Exhibit-1002-0178

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | Examiner | Art Unit |
| | ILYA TREYGER | 3761 |

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|---|---|---|---|---|---|---|---|
| ✓ | Rejected | - | Cancelled | N | Non-Elected | A | Appeal |
| = | Allowed | ÷ | Restricted | I | Interference | O | Objected |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| CLAIM | | DATE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Final | Original | 03/03/2014 | | | | | | | | |
| | 1 | ✓ | | | | | | | | |
| | 2 | ✓ | | | | | | | | |
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| | 6 | ✓ | | | | | | | | |
| | 7 | ✓ | | | | | | | | |
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| | 9 | ✓ | | | | | | | | |
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| | 11 | ✓ | | | | | | | | |
| | 12 | ✓ | | | | | | | | |
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| | 16 | ✓ | | | | | | | | |
| | 17 | ✓ | | | | | | | | |
| | 18 | ✓ | | | | | | | | |
| | 19 | ✓ | | | | | | | | |
| | 20 | ✓ | | | | | | | | |
| | 21 | ✓ | | | | | | | | |
| | 22 | ✓ | | | | | | | | |



Solvetum-Exhibit 1002-0180

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | |
| Filing Date | 2013-06-13 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | 3761 |
| Examiner Name | /Ilya Treyger/ |
| Attorney Docket Number | ADAHAN16A |

| U.S.PATENTS | | | | | | Remove |
|---|---|---|---|---|---|---|
| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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Solvetum-Exhibit-1002-0181

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

Solvetum Exhibit 1002-0182

Receipt date: 06/14/2013

**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 13917865 - GAU: 3761 |
| Filing Date | 2013-06-13 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | 3761 |
| Examiner Name | /Ilya Treyger/ |
| Attorney Docket Number | ADAHAN16A |

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Solvetum-Exhibit-1002-0183

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** | Filing Date | 2013-06-13 |
| **( Not for submission under 37 CFR 1.99)** | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

Solvetum Exhibit 1002-0184

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

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Solvetum Exhibit 1002-0185

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** | Filing Date | 2013-06-13 |
| **( Not for submission under 37 CFR 1.99)** | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

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|---|---|---|---|---|---|---|---|---|
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Solvetum Exhibit 1002-0186

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** | Filing Date | 2013-06-13 |
| **( Not for submission under 37 CFR 1.99)** | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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| | 18 | 2 307 180 | GB | A | 1997-05-21 | KCI MEDICAL LIMITED | | ☐ |
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| | 20 | 0865304 | EP | B1 | 2001-07-18 | KCI Medical Ltd. | | ☐ |



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

Solvetum Exhibit 1002-0187

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 21 | 8401904 | WO | A1 | 1984-05-24 | Gunnar Swanbeck | | ☐ |
| | 22 | 2002541978 | JP | A | 2002-12-10 | | This corresponds with International Publication No. WO 00/64394 | ☒ |
| | 23 | 0064394 | WO | A1 | 2000-11-02 | KCI Medical Limited | | ☐ |

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|---|---|---|---|
| | 1 | Worth et al., "PRELIMINARY REPORT The Effectiveness of Bacterial Filtration In Vented Wound Drains" Journal of Surgical Research 27(6):405-407 (1979) | ☐ |
| | 2 | Levite et al., "POSSIBILITIES FOR DUAL-LUMEN DRAINAGES IN SURGERY" Body of the RSFSR Ministry of Public Health, Monthly Scientific and Practical Journal, pages 39-41. (1987) | ☐ |
| | 3 | Notice of opposition to European patent EP2127690, dated March 20, 2013 | ☐ |
| | 4 | Facts and Submissions in Opposition of EP 2127690, dated March 20, 2013 | ☐ |
| | 5 | Edlich et al., "Evaluation of a New, Improved Surgical Drainage System" NEW INSTRUMENTS, 149:295-298 (February 1985) | ☐ |
| | 6 | Communication of a notice of opposition of EP 2127690, dated April 8, 2013 | ☐ |

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Solvetum Exhibit 1002-0188

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

| **EXAMINER SIGNATURE** | | | |
|---|---|---|---|
| Examiner Signature | /Ilya Treyger/ | Date Considered | 03/03/2014 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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Solvetum-Exhibit-1002-0189

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Filing Date | 2013-06-13 |
| | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /rlb/ | Date (YYYY-MM-DD) | 2013-06-14 |
|---|---|---|---|
| Name/Print | Roger L. Browdy | Registration Number | 25,618 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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Solvetum Exhibit 1002-0190

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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www.uspto.gov

# BIB DATA SHEET

**CONFIRMATION NO. 7555**

| SERIAL NUMBER | FILING or 371(c) DATE<br>RULE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | 604 | 3761 | ADAHAN16A |

**APPLICANTS**

**INVENTORS**

Carmeli ADAHAN, Jerusalem, ISRAEL;

**** CONTINUING DATA ************************* I.T. 03/03/2014**

This application is a CON of 11/989,297 01/24/2008 PAT 8506554
which is a 371 of PCT/IL2005/000784 07/24/2005

**** FOREIGN APPLICATIONS ************************* I.T. 03/03/2014**

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
07/09/2013

| Foreign Priority claimed ☐ Yes ☑ No<br>35 USC 119(a-d) conditions met ☐ Yes ☑ No<br>Verified and Acknowledged /ILYA Y TREYGER/ Examiner's Signature | ☐ Met after Allowance<br>Initials | STATE OR COUNTRY | SHEETS DRAWINGS | TOTAL CLAIMS | INDEPENDENT CLAIMS |
|---|---|---|---|---|---|
| | | ISRAEL | 2 | 22 | 3 |

**ADDRESS**

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006
UNITED STATES

**TITLE**

WOUND CLOSURE AND DRAINAGE SYSTEM

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Solvetum-Exhibit 1002-0192

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | Examiner | Art Unit |
| | ILYA TREYGER | 3761 |

| CPC- SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| CPC COMBINATION SETS - SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| US CLASSIFICATION SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 604 | 540-544 | 10/5/2010 | I. T. |

| SEARCH NOTES | | |
|---|---|---|
| Search Notes | Date | Examiner |
| EAST Search attached | 3/3/2014 | I. T. |

| INTERFERENCE SEARCH | | | |
|---|---|---|---|
| US Class/ CPC Symbol | US Subclass / CPC Group | Date | Examiner |
| 604 | | | |

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L2 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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| L4 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L5 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L6 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L7 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L8 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L9 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L10 | 48 | L2 and L3 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L11 | 215 | L2 and L4 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L12 | 305 | L2 and L5 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L13 | 552 | L2 and L6 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L14 | 258 | L2 and L7 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0194

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| L16 | 24 | L2 and L9 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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| L22 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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| L32 | 305 | L22 and L25 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L33 | 552 | L22 and L26 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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| L35 | 14 | L22 and L28 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L36 | 24 | L22 and L29 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L37 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L38 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:23 |

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| | | ("5149331").URPN. | USOCR | | | |
| L39 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L40 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
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| L42 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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| L46 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L47 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L48 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L49 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L50 | 48 | L42 and L43 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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Solvetum-Exhibit 1002-0197

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| L53 | 552 | L42 and L46 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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| L55 | 14 | L42 and L48 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L56 | 24 | L42 and L49 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L57 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L58 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L59 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L60 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L61 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L62 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L63 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L64 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L65 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L66 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L67 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L68 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L69 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L70 | 48 | L62 and L63 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L71 | 215 | L62 and L64 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L72 | 305 | L62 and L65 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L73 | 552 | L62 and L66 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L74 | 258 | L62 and L67 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L75 | 14 | L62 and L68 | US-PGPUB; | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| L76 | 24 | L62 and L69 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L77 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L78 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L79 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L80 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L82 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L83 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L84 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L85 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L86 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L87 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| L88 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L89 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L90 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L91 | 48 | L83 and L84 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L92 | 215 | L83 and L85 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L93 | 305 | L83 and L86 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L94 | 552 | L83 and L87 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L95 | 258 | L83 and L88 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L96 | 14 | L83 and L89 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L97 | 24 | L83 and L90 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L98 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L99 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L100 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L101 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | USOCR | | | |
| L102 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L103 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L104 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L105 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L106 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L107 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L108 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L109 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L110 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L111 | 48 | L103 and L104 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L112 | 215 | L103 and L105 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L113 | 305 | L103 and L106 | US-PGPUB; USPAT; USOCR; EPO; JPO; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| L114 | 552 | L103 and L107 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L115 | 258 | L103 and L108 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L116 | 14 | L103 and L109 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L117 | 24 | L103 and L110 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L118 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L119 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L120 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L121 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L122 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| L123 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L124 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L125 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L126 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L127 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L128 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L129 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L130 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L131 | 48 | L123 and L124 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L132 | 215 | L123 and L125 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L133 | 305 | L123 and L126 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L134 | 552 | L123 and L127 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L135 | 258 | L123 and L128 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L136 | 14 | L123 and L129 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L137 | 24 | L123 and L130 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| L138 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L139 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L140 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L141 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L142 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L143 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L144 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L145 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L146 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L147 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L148 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L149 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L150 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L151 | 48 | L143 and L144 | US-PGPUB; | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| L152 | 215 | L143 and L145 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L153 | 305 | L143 and L146 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L154 | 552 | L143 and L147 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L155 | 258 | L143 and L148 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L156 | 14 | L143 and L149 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L157 | 24 | L143 and L150 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L158 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L159 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L160 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L161 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L162 | 45 | L98 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L163 | 72 | L99 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L164 | 38 | L100 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L165 | 86 | L101 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L166 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L167 | 0 | L166 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L168 | 7 | L166 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L169 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L170 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| L171 | 43 | L170 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L172 | 0 | L170 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L173 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L174 | 10 | L173 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L176 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L177 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L178 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L179 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L180 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L181 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L182 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L183 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L184 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L185 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L186 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L187 | 48 | L179 and L180 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L188 | 215 | L179 and L181 | US-PGPUB; USPAT; USOCR; EPO; JPO; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| L189 | 305 | L179 and L182 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L190 | 552 | L179 and L183 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L191 | 258 | L179 and L184 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L192 | 14 | L179 and L185 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L193 | 24 | L179 and L186 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L194 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L195 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L196 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L197 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L198 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L199 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L200 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L201 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L202 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L203 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L204 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L205 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L206 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L207 | 48 | L199 and L200 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L208 | 215 | L199 and L201 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L209 | 305 | L199 and L202 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L210 | 552 | L199 and L203 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L211 | 258 | L199 and L204 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L212 | 14 | L199 and L205 | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | USOCR; EPO; JPO; DERWENT; IBM_TDB | | | |
| L213 | 24 | L199 and L206 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L214 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L215 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L216 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L217 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L218 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L219 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L220 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L221 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L222 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L223 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L224 | 1944 | (604/540-544).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:23 |
| L225 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L226 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L227 | 48 | L219 and L220 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L228 | 215 | L219 and L221 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L229 | 305 | L219 and L222 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L230 | 552 | L219 and L223 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L231 | 258 | L219 and L224 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L232 | 14 | L219 and L225 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L233 | 24 | L219 and L226 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L234 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L235 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L236 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L237 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L238 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L239 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L240 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L241 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L242 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L243 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L244 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L245 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L246 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L247 | 48 | L239 and L240 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L248 | 215 | L239 and L241 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L249 | 305 | L239 and L242 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| L250 | 552 | L239 and L243 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L251 | 258 | L239 and L244 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L252 | 14 | L239 and L245 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L253 | 24 | L239 and L246 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L254 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L255 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L256 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L257 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L258 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
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|---|---|---|---|---|---|---|
| L259 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L260 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L261 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L262 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L263 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L264 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L265 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L266 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L267 | 48 | L259 and L260 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L268 | 215 | L259 and L261 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L269 | 305 | L259 and L262 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L270 | 552 | L259 and L263 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L271 | 258 | L259 and L264 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L272 | 14 | L259 and L265 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L273 | 24 | L259 and L266 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| L274 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L275 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L276 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L277 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L278 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L279 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L280 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L281 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L282 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L283 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L284 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L285 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L286 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L287 | 48 | L279 and L280 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0216

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| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| L288 | 215 | L279 and L281 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L289 | 305 | L279 and L282 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L290 | 552 | L279 and L283 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L291 | 258 | L279 and L284 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L292 | 14 | L279 and L285 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L293 | 24 | L279 and L286 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L294 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L295 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L296 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L297 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L298 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L299 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L300 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L301 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L302 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L303 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L304 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L305 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L306 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L307 | 48 | L299 and L300 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L308 | 215 | L299 and L301 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L309 | 305 | L299 and L302 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L310 | 552 | L299 and L303 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| L311 | 258 | L299 and L304 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L312 | 14 | L299 and L305 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L313 | 24 | L299 and L306 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L314 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L315 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L316 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L317 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L318 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L319 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
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Solvetum-Exhibit 1002-0219

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|---|---|---|---|---|---|---|
| L320 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L321 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L322 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L323 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L324 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L325 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L326 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L327 | 48 | L319 and L320 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L328 | 215 | L319 and L321 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L329 | 305 | L319 and L322 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L330 | 552 | L319 and L323 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L331 | 258 | L319 and L324 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L332 | 14 | L319 and L325 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L333 | 24 | L319 and L326 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L334 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| L335 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L336 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L337 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L338 | 45 | L274 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L339 | 72 | L275 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L340 | 38 | L276 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L341 | 86 | L277 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L342 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L343 | 0 | L342 and (air adj hole) | US-PGPUB; USPAT; EPO; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| L344 | 7 | L342 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L345 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L346 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L347 | 43 | L346 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L348 | 0 | L346 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L349 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L350 | 10 | L349 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L351 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L352 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L357 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L358 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L359 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L360 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L361 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L362 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| L363 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L364 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L365 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L366 | 48 | L358 and L359 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L367 | 215 | L358 and L360 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L368 | 305 | L358 and L361 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L369 | 552 | L358 and L362 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L370 | 258 | L358 and L363 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L371 | 14 | L358 and L364 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L372 | 24 | L358 and L365 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L373 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L374 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L375 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L376 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | USOCR | | | |
| L377 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L378 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L379 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L380 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L381 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L382 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L383 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L384 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L385 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L386 | 48 | L378 and L379 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L387 | 215 | L378 and L380 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L388 | 305 | L378 and L381 | US-PGPUB; USPAT; USOCR; EPO; JPO; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0224

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|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| L389 | 552 | L378 and L382 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L390 | 258 | L378 and L383 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L391 | 14 | L378 and L384 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L392 | 24 | L378 and L385 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L393 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L394 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L395 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L396 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L397 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| L398 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L399 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L400 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L401 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L402 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L403 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L404 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L405 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L406 | 48 | L398 and L399 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L407 | 215 | L398 and L400 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L408 | 305 | L398 and L401 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L409 | 552 | L398 and L402 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L410 | 258 | L398 and L403 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L411 | 14 | L398 and L404 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L412 | 24 | L398 and L405 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| L413 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L414 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L415 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L416 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L417 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L418 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L419 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L420 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L421 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L422 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L423 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L424 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L425 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L426 | 48 | L418 and L419 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0227

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|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| L427 | 215 | L418 and L420 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L428 | 305 | L418 and L421 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L429 | 552 | L418 and L422 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L430 | 258 | L418 and L423 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L431 | 14 | L418 and L424 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L432 | 24 | L418 and L425 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L433 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L434 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L435 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L436 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L437 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L438 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L439 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L440 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L441 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L442 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L443 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L444 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L445 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L446 | 48 | L438 and L439 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L447 | 215 | L438 and L440 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L448 | 305 | L438 and L441 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L449 | 552 | L438 and L442 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0229

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| L450 | 258 | L438 and L443 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L451 | 14 | L438 and L444 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L452 | 24 | L438 and L445 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L453 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L454 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L455 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L456 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L457 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L458 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| | | | | | | |

Solvetum-Exhibit 1002-0230

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|---|---|---|---|---|---|---|
| L459 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L460 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L461 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L462 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L463 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L464 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L465 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L466 | 48 | L458 and L459 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L467 | 215 | L458 and L460 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L468 | 305 | L458 and L461 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L469 | 552 | L458 and L462 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L470 | 258 | L458 and L463 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L471 | 14 | L458 and L464 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L472 | 24 | L458 and L465 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L473 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| L474 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L475 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L476 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L477 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L478 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L479 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L480 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L481 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L482 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L483 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L484 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L485 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L486 | 48 | L478 and L479 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L487 | 215 | L478 and L480 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0232

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| L488 | 305 | L478 and L481 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L489 | 552 | L478 and L482 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L490 | 258 | L478 and L483 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L491 | 14 | L478 and L484 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L492 | 24 | L478 and L485 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L493 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L494 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L495 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L496 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L497 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L498 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L499 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L500 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L501 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L502 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L503 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L504 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L505 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| L506 | 48 | L498 and L499 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L507 | 215 | L498 and L500 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L508 | 305 | L498 and L501 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L509 | 552 | L498 and L502 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L510 | 258 | L498 and L503 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0234

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|---|---|---|---|---|---|---|
| L511 | 14 | L498 and L504 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L512 | 24 | L498 and L505 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L513 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L514 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L515 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L516 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| L517 | 45 | L453 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L518 | 72 | L454 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| L519 | 38 | L455 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2014/03/03 14:23 |

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|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| L520 | 86 | L456 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L521 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L522 | 0 | L521 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L523 | 7 | L521 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L524 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L525 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L526 | 43 | L525 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L527 | 0 | L525 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L528 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L529 | 10 | L528 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L530 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L531 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L532 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0236

| | | | | | | |
|---|---|---|---|---|---|---|
| L533 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L534 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L535 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L536 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L537 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L538 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L539 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L540 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L541 | 48 | L533 and L534 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L542 | 215 | L533 and L535 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L543 | 305 | L533 and L536 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L544 | 552 | L533 and L537 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L545 | 258 | L533 and L538 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L546 | 14 | L533 and L539 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L547 | 24 | L533 and L540 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:24 |

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| L548 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L549 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L550 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L551 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L552 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L553 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L554 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L555 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L556 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L557 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L558 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L559 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L560 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L561 | 48 | L553 and L554 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0238

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:24 |
| L562 | 215 | L553 and L555 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L563 | 305 | L553 and L556 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L564 | 552 | L553 and L557 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L565 | 258 | L553 and L558 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L566 | 14 | L553 and L559 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L567 | 24 | L553 and L560 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L568 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L569 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L570 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L571 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0239

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L572 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L573 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L574 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L575 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L576 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L577 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L578 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L579 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L580 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L581 | 48 | L573 and L574 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L582 | 215 | L573 and L575 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L583 | 305 | L573 and L576 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L584 | 552 | L573 and L577 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0240

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| L585 | 258 | L573 and L578 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L586 | 14 | L573 and L579 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L587 | 24 | L573 and L580 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L588 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L589 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L590 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L591 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L592 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L593 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
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Solvetum-Exhibit 1002-0241

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|---|---|---|---|---|---|---|
| L594 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L595 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L596 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L597 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L598 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L599 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L600 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L601 | 48 | L593 and L594 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L602 | 215 | L593 and L595 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L603 | 305 | L593 and L596 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L604 | 552 | L593 and L597 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L605 | 258 | L593 and L598 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L606 | 14 | L593 and L599 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L607 | 24 | L593 and L600 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L608 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |

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|---|---|---|---|---|---|---|
| L609 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L610 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L611 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L612 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L613 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L614 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L615 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L616 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L617 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L618 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L619 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L620 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L621 | 48 | L613 and L614 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L622 | 215 | L613 and L615 | US-PGPUB; | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:24 |
| L623 | 305 | L613 and L616 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L624 | 552 | L613 and L617 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L625 | 258 | L613 and L618 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L626 | 14 | L613 and L619 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L627 | 24 | L613 and L620 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L628 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L629 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L630 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L631 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |

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| | | "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| L632 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L633 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L634 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L635 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L636 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L637 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L638 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L639 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L640 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L641 | 48 | L633 and L634 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L642 | 215 | L633 and L635 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L643 | 305 | L633 and L636 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L644 | 552 | L633 and L637 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L645 | 258 | L633 and L638 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |

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|---|---|---|---|---|---|---|
| L646 | 14 | L633 and L639 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L647 | 24 | L633 and L640 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L648 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L649 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L650 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L651 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L652 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L653 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L654 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L655 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L656 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L657 | 2706 | (604/317-323).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:24 |
| L658 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L659 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L660 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L661 | 48 | L653 and L654 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L662 | 215 | L653 and L655 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L663 | 305 | L653 and L656 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L664 | 552 | L653 and L657 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L665 | 258 | L653 and L658 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L666 | 14 | L653 and L659 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L667 | 24 | L653 and L660 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L668 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L669 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L670 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L671 | 411 | ("1355846" \| "2547758" \| "2632443" \| | US-PGPUB; | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | USPAT; USOCR | | | 14:24 |
| L672 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L673 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L674 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L675 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L676 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L677 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L678 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L679 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L680 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L681 | 48 | L673 and L674 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L682 | 215 | L673 and L675 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L683 | 305 | L673 and L676 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0248

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| L684 | 552 | L673 and L677 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L685 | 258 | L673 and L678 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L686 | 14 | L673 and L679 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L687 | 24 | L673 and L680 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L688 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L689 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L690 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L691 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| L692 | 45 | L628 and (vent venting ventillation) | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:24 |

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|---|---|---|---|---|---|---|
| | | | USOCR; EPO; JPO; DERWENT; IBM_TDB | | | |
| L693 | 72 | L629 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L694 | 38 | L630 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L695 | 86 | L631 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L696 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L697 | 0 | L696 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L698 | 7 | L696 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L699 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L700 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L701 | 43 | L700 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L702 | 0 | L700 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L703 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; | OR | OFF | 2014/03/03 14:24 |

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|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| L704 | 10 | L703 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| L705 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L706 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| L713 | 2 | ("20050148913" \| "5578006" \| "6817996").PN. | USPAT | OR | OFF | 2014/03/03 14:24 |
| L714 | 2 | ("20050148913" \| "5578006" \| "6817996").PN. | USPAT | OR | OFF | 2014/03/03 14:24 |

**EAST Search History (Interference)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L81 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| L175 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| L353 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| L354 | 0 | pressure and regulating and device and | US- | OR | OFF | 2014/03/03 |

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|---|---|---|---|---|---|---|
| | | sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | PGPUB | | | 14:23 |
| L355 | 1 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | USPAT; UPAD | OR | OFF | 2014/03/03 14:23 |
| L356 | 2 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| L707 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |
| L708 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |
| L709 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and | US-PGPUB | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0252

| | | | | | | |
|---|---|---|---|---|---|---|
| | | impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | | | | |
| L710 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |
| L711 | 1 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | USPAT; UPAD | OR | OFF | 2014/03/03 14:24 |
| L712 | 2 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |

**3/ 3/ 2014 2:38:48 PM**
**C:\ Users\ itreyger\ Documents\ EAST\ Workspaces\ 13917865.wsp**

179704.2

PTO/SB/81 (01-09)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

| | |
|---|---|
| Application Number | 11/989,297 |
| Filing Date | 2008-01-24 |
| First Named Inventor | C. ADAHAN |
| Title | WOUND CLOSURE AND DRAINAGE SYSTEM |
| Art Unit | 3761 |
| Examiner Name | TREYGER, ILYA Y |
| Attorney Docket Number | ADAHAN |

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

*OR*

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

01444

*OR*

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

| Practitioner(s) Name | Registration Number |
|---|---|
| | |
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Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

*OR*

☐ The address associated with Customer Number:

*OR*

| | | | | | |
|---|---|---|---|---|---|
| ☐ Firm or Individual Name | | | | | |
| Address | | | | | |
| City | | State | | Zip | |
| Country | | | | | |
| Telephone | | Email | | | |

I am the:

☒ Applicant/Inventor.

*OR*

☐ Assignee of record of the entire interest. See 37 CFR 3.71.
*Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on* _____

SIGNATURE of Applicant or Assignee of Record

| | | | |
|---|---|---|---|
| Signature | X Carmeli Adahan | Date | X MARCH 8, 13 |
| Name | Carmeli ADAHAN | Telephone | |
| Title and Company | | | |

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Solvetum-Exhibit 1002-0254

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 19126325 |
| **Application Number:** | 13917865 |
| **International Application Number:** | |
| **Confirmation Number:** | 7555 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Customer Number:** | 1444 |
| **Filer:** | Roger Lowen Browdy/Jason Williams |
| **Filer Authorized By:** | Roger Lowen Browdy |
| **Attorney Docket Number:** | ADAHAN16A |
| **Receipt Date:** | 27-MAY-2014 |
| **Filing Date:** | 14-JUN-2013 |
| **Time Stamp:** | 11:39:40 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Power of Attorney | 2014-05-27_PowerOfAttorney-ADAHAN16A.pdf | 852593<br>8be85f88bf4cc2ff7e676290be8f85af38ad981b | no | 1 |

| | |
|---|---|
| **Warnings:** | |
| **Information:** | |

Solvetum-Exhibit 1002-0255

| | |
|---|---|
| **Total Files Size (in bytes):** | 852593 |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN |

**CONFIRMATION NO. 7555**

**POA ACCEPTANCE LETTER**

1444
Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

*OC000000068754180*

Date Mailed: 06/02/2014

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/27/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/mbeyene/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



Solvetum-Exhibit 1002-0257

| | |
|---|---|
| **Doc Code: DIST.E.FILE**<br>**Document Description: Electronic Terminal Disclaimer - Filed** | PTO/SB/26<br>U.S. Patent and Trademark Office<br>Department of Commerce |

| | |
|---|---|
| Electronic Petition Request | **TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT** |
| Application Number | 13917865 |
| Filing Date | 14-Jun-2013 |
| First Named Inventor | Carmeli ADAHAN |
| Attorney Docket Number | ADAHAN |
| Title of Invention | WOUND CLOSURE AND DRAINAGE SYSTEM |

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

| Owner | Percent Interest |
|---|---|
| Carmeli ADAHAN | 100% |

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

8506554

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

Solvetum-Exhibit 1002-0258

| | |
|---|---|
| ○ | I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application. |

Applicant claims the following fee status:

◉ Small Entity

○ Micro Entity

○ Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 25618

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

○ A joint inventor; all of whom are signing this request

| | |
|---|---|
| Signature | /rlb/ |
| Name | Roger L Browdy |

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 13917865 |
| **Filing Date:** | 14-Jun-2013 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Filer:** | Roger Lowen Browdy |
| **Attorney Docket Number:** | ADAHAN |

Filed as Small Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| Statutory or Terminal Disclaimer | 1814 | 1 | 160 | 160 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

Solvetum-Exhibit 1002-0260

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **160** |

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 13917865

Filing Date: 14-Jun-2013

Applicant/Patent under Reexamination: ADAHAN et al.

Electronic Terminal Disclaimer filed on June 2, 2014

☒ APPROVED

**This patent is subject to a terminal disclaimer**

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 19180012 |
| **Application Number:** | 13917865 |
| **International Application Number:** | |
| **Confirmation Number:** | 7555 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Customer Number:** | 1444 |
| **Filer:** | Roger Lowen Browdy |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | ADAHAN |
| **Receipt Date:** | 02-JUN-2014 |
| **Filing Date:** | 14-JUN-2013 |
| **Time Stamp:** | 10:18:40 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $160 |
| RAM confirmation Number | 9961 |
| Deposit Account | |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part / .zip | Pages (if appl.) |
|---|---|---|---|---|---|

Solvetech Exhibit 1002-0263

| | | | | | |
|---|---|---|---|---|---|
| 1 | Electronic Terminal Disclaimer-Filed | eTerminal-Disclaimer.pdf | 33441<br>43634c09aa8c9961bbaf9fae29d5867b1f8e6d47 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30276<br>7248c59eb16233af1fed951f37c4c7128aa3105b | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | | **Total Files Size (in bytes):** | 63717 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Atty. Docket: ADAHAN 16A

| | | |
|---|---|---|
| In re Application of: | ) | Conf. No.: 7555 |
| | ) | |
| Carmeli ADAHAN et al. | ) | Examiner: Ilya Y. Treyger |
| | ) | |
| Filed: June 14, 2013 | ) | Art Unit: 3761 |
| | ) | |
| U.S. Appl. No.: 13/917,865 | ) | Washington, D.C. |
| | ) | |
| For: WOUND CLOSURE AND… | ) | June 2, 2014 |

**RESPONSE**

U.S. Patent and Trademark Office
Customer Service Window
Randolph Building, Mail Stop Amendment
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the non-final action mailed March 11, 2014, please enter the following remarks and arguments.

**Listing of Claims** begins on page 2 of this paper.

**Remarks** begin on page 6 of this paper.

**Listing of the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (Original). A vacuum system for applying negative pressure to a wound, the vacuum system comprising: an enclosure, a venting arrangement, a tube, a vacuum source, and a controller:

the enclosure being attachable to a periphery of the wound so as to define a confined volume;

the enclosure having an enclosure outlet connectable to said vacuum source via said tube so that negative pressure can be selectively created in said volume;

the venting arrangement comprising a flow restrictor to restrict flow through said venting arrangement and to thereby provide a controlled flow of ambient air into said vacuum system upstream of the vacuum source;

the controller configured for controlling operation of the vacuum source while providing venting of the vacuum system via said venting arrangement to provide a desired level of said negative pressure in said confined volume.

2 (Original). The vacuum system according to claim 1, wherein said flow restrictor is provided in any one of the enclosure or the tube.

3 (Original). The vacuum system according to claim 1, further comprising a sensor for enabling determination of a level of said negative pressure in said confined volume.

4 (Original). The vacuum system according to claim 1, further comprising a waste container in fluid communication with said vacuum source.

5 (Original). The vacuum system according to claim 1, wherein said vacuum source comprises a vacuum pump driven by a motor.

6 (Original). The vacuum system according to claim 5, wherein said motor is an electric motor, and said controller controls operation of said motor to thereby provide a desired level of said negative pressure in said confined volume.



Solvetum-Exhibit 1002-0266

7 (Original). The vacuum system according to claim 6, wherein said controller controls the electric current or the voltage of said motor to control said level of said negative pressure in said confined volume.

8 (Original). The vacuum system according to claim 6, wherein said controller controls the torque of said motor to control said level of said negative pressure in said confined volume.

9 (Original). The vacuum system according to claim 1, wherein ambient pressure may be restored in said confined volume via said venting arrangement when said vacuum pump is not operating.

10 (Original). The vacuum system according to claim 1, wherein said venting arrangement comprises at least one of:

- one or more bleeding holes;
- a porous body;
- an orifice.

11 (Original). A vacuum system for applying negative pressure to a wound, the vacuum system comprising: an enclosure, a venting arrangement, a tube, a vacuum source, and a controller:

the enclosure being attachable to a periphery of the wound so as to define a confined volume;

the enclosure having an enclosure outlet connectable to said vacuum source via said tube so that negative pressure can be selectively created in said volume, said venting arrangement located outside said enclosure and comprising a flow restrictor to restrict flow through said venting arrangement and to thereby provide a controlled flow of ambient air into said tube, said controlled flow of ambient air entering said tube via said venting arrangement without entering said enclosure;

the controller configured for controlling operation of the vacuum source while said tube is being vented via said venting arrangement to provide a desired level of said negative pressure in said confined volume.

12 (Original). The vacuum system according to claim 11, further comprising a sensor for enabling determination of a level of said negative pressure in said confined volume.



Solvetum-Exhibit 1002-0267

13 (Original). The vacuum system according to claim 11, further comprising a waste container in fluid communication with said vacuum source.

14(Original). The vacuum system according to claim 11, wherein said vacuum source comprises a vacuum pump driven by a motor.

15 (Original). The vacuum system according to claim 14, wherein said motor is an electric motor, and said controller controls operation of said motor to thereby provide a desired level of said negative pressure in said confined volume.

16 (Original). The vacuum system according to claim 15, wherein said controller controls at least one of the electric current of said motor, or the voltage of said motor, or the torque of said motor to control said level of said negative pressure in said confined volume.

17 (Original). The vacuum system according to claim 11, wherein ambient pressure may be restored in said confined volume via said venting arrangement when said vacuum pump is not operating.

18 (Original). The vacuum system according to claim 11, wherein said venting arrangement comprises at least one of:

- one or more bleeding holes;
- a porous body;
- an orifice.

19 (Original). A method for applying negative pressure to a wound, comprising:

(a) providing a vacuum system comprising at least: an enclosure, a venting arrangement, a tube, and a vacuum source:

the enclosure being attachable to a periphery of the wound so as to define a confined volume;

the enclosure having an enclosure outlet connectable to said vacuum source via said tube so that negative pressure can be selectively created in said volume;

the venting arrangement comprising a flow restrictor to restrict flow through said venting arrangement and to thereby provide a controlled flow of ambient air into said system upstream of the vacuum source;



Solvetum-Exhibit 1002-0268

(b) controlling operation of the vacuum source while the vacuum system is being vented via the venting arrangement to thereby provide a desired level of said negative pressure in said confined volume.

20 (Original). The method according to claim 19, wherein the vacuum source comprises a vacuum pump driven by an electric motor, and wherein step (b) comprises controlling operation of said motor to thereby provide a desired level of said negative pressure in said confined volume.

21 (Original). The method according to claim 20, wherein step (b) comprises controlling at least one of the electric current, or the voltage, or the torque of said motor to control said level of said negative pressure in said confined volume.

22 (Original). The method according to claim 19, wherein said venting arrangement comprises at least one of:

- one or more bleeding holes;
- a porous body;
- an orifice.



Solvetum-Exhibit 1002-0269

## REMARKS

Claims 1-22 presently appear in this case. No claims have been allowed. The Official Action of June 14, 2013, has now been carefully studied. Reconsideration and allowance are hereby respectfully urged.

Briefly, the present invention relates to A vacuum system for applying negative pressure to a wound and a method for applying negative pressure to a wound.

Claims 1-22 have been rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 6, 8, 9, 20 and 24 of Adahan (US8,506,554) in view of Argenta. The examiner states that a timely filed terminal disclaimer may be used to overcome this rejection.

A terminal disclaimer with respect to the Adahan patent has been submitted on even date herewith, thereby obviating this rejection. Reconsideration and withdrawal thereof are therefore respectfully urged.

It is submitted that all of the claims now present in the case fully define over the references of record and fully comply with 35 USC 112. Reconsideration and allowance are therefore earnestly solicited.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.
Attorneys for Applicant(s)

By /rlb/
Roger L. Browdy
Registration No. 25,618

RLB/me
Telephone No.: (202) 628-5197
Facsimile No.: (202) 737-3528



Solvetum-Exhibit 1002-0270

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 19183339 |
| **Application Number:** | 13917865 |
| **International Application Number:** | |
| **Confirmation Number:** | 7555 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Customer Number:** | 1444 |
| **Filer:** | Roger Lowen Browdy/Jason Williams |
| **Filer Authorized By:** | Roger Lowen Browdy |
| **Attorney Docket Number:** | ADAHAN |
| **Receipt Date:** | 02-JUN-2014 |
| **Filing Date:** | 14-JUN-2013 |
| **Time Stamp:** | 14:01:53 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 2014-06-02Response-Adahan16A.pdf | 143386<br>4f0e60c5d08f4cbaee9b45719947a43fac0d8d50 | yes | 7 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Miscellaneous Incoming Letter | 1 | 1 |
| | Amendment/Req. Reconsideration-After Non-Final Reject | 2 | 2 |
| | Claims | 3 | 6 |
| | Applicant Arguments/Remarks Made in an Amendment | 7 | 7 |

| | |
|---|---|
| **Warnings:** | |
| **Information:** | |
| **Total Files Size (in bytes):** | 143386 |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: Carmeli ADAHAN et al.

Art Unit: 3761

Application No.: 13/917,865 Confirmation No.: 7555

Examiner: Ilya Y. Treyger

Filing Date: June 14, 2013

Washington, D.C.

For: WOUND CLOSURE AND DRAINAGE SYSTEM

Atty.'s Docket: ADAHAN 16A

Date: June 2, 2014

THE COMMISSIONER OF PATENTS
U.S. Patent and Trademark Office
Randolph Building, **Mail Stop AMENDMENT**
401 Dulany Street
Alexandria, VA 22314

Sir:

Transmitted herewith is a [XX] **Response** in the above-identified application.

[XX] Small Entity Status: Applicant(s) claim small entity status. See 37 C.F.R. §1.27.

[XX] No additional fee is required.

[ ] The fee has been calculated as shown below:

| | (Col. 1) CLAIMS REMAINING AFTER AMENDMENT | | (Col. 2) HIGHEST NO. PREVIOUSLY PAID FOR | (Col. 3) PRESENT EXTRA EQUALS | SMALL ENTITY RATE | SMALL ENTITY ADDITIONAL FEE | OR | OTHER THAN SMALL ENTITY RATE | OTHER THAN SMALL ENTITY ADDITIONAL FEE |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL | 22 | MINUS | ** 22 | | x 40 | $ | | x 80 | $ |
| INDEP. | 3 | MINUS | *** 3 | | x 210 | $ | | x 420 | $ |
| FIRST PRESENTATION OF MULTIPLE DEP. CLAIM | | | | | + 390 | $ | | + 780 | $ |
| | | | | | ADDITIONAL FEE TOTAL | $ | OR | TOTAL | $ |

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid for" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid for" IN THIS SPACE is less than 3, write "3" in this space.

The "Highest Number Previously Paid For" (total or independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment of the number of claims originally filed.

[XX] Conditional Petition for Extension of Time

If any extension of time for a response is required, applicant requests that this be considered a petition therefor.

[ ] It is hereby petitioned for an extension of time in accordance with 37 CFR 1.136(a). The appropriate fee required by 37 CFR 1.17 is calculated as shown below:

| Small Entity | | | Other Than Small Entity | | |
|---|---|---|---|---|---|
| Response Filed Within | | | Response Filed Within | | |
| [ ] | First | - $ 100.00 | [ ] | First | - $ 200.00 |
| [ ] | Second | - $ 300.00 | [ ] | Second | - $ 600.00 |
| [ ] | Third | - $ 700.00 | [ ] | Third | - $ 1400.00 |
| [ ] | Fourth | - $1100.00 | [ ] | Fourth | - $ 2200.00 |
| Month After Time Period Set | | | Month After Time Period Set | | |

[ ] Less fees ($_____) already paid for ___ month(s) extension of time on _____.

[ ] Information Disclosure Statement filed with fee in the amount of $.

[ ] Please charge my Deposit Account No. 02-4035 in the amount of $_____.

[ ] Credit Card Payment online, authorizing payment in the amount of $.

[ ] A check in the amount of $_____ is attached (check no. ).

[XX] The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. 02-4035. This authorization and request is not limited to payment of all fees associated with this communication, including any Extension of Time fee, not covered by check or specific authorization, but is also intended to include all fees for the presentation of extra claims under 37 CFR §1.16 and all patent processing fees under 37 CFR §1.17 throughout the prosecution of the case. This blanket authorization does not include patent issue fees under 37 CFR §1.18.

BROWDY AND NEIMARK, P.L.L.C.

Attorneys for Applicant(s)

Facsimile: (202) 737-3528
Telephone: (202) 628-5197

By: /rlb/
Roger L. Browdy
Registration No. 25,618

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>13/917,865 | Filing Date<br>06/14/2013 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY**: ☐ LARGE ☒ SMALL ☐ MICRO

## APPLICATION AS FILED – PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | RATE ($) | FEE ($) |
|---|---|---|---|---|
| ☐ BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | |
| ☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | |
| ☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | minus 20 = | * | X $ = | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | minus 3 = | * | X $ = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | |

## APPLICATION AS AMENDED – PART II

AMENDMENT

| 06/02/2014 | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * 22 | Minus | ** 22 | = 0 | X $40 = | 0 |
| Independent (37 CFR 1.16(h)) | * 3 | Minus | ***3 | = 0 | X $210 = | 0 |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | TOTAL ADD'L FEE | 0 |

AMENDMENT

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | X $ = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | X $ = | |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/CHERYL CLARK/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
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# NOTICE OF ALLOWANCE AND FEE(S) DUE

1444 7590 06/18/2014

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

| EXAMINER |
|---|
| TREYGER, ILYA Y |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3761 | |

DATE MAILED: 06/18/2014

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

TITLE OF INVENTION: WOUND CLOSURE AND DRAINAGE SYSTEM

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | SMALL | $480 | $0 | $0 | $480 | 09/18/2014 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**





Solvetum-Exhibit 1002-0275

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail** **Mail Stop ISSUE FEE**
**Commissioner for Patents**
**P.O. Box 1450**
**Alexandria, Virginia 22313-1450**
**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

1444 7590 06/18/2014
Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| (Depositor's name) |
|---|
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

TITLE OF INVENTION: WOUND CLOSURE AND DRAINAGE SYSTEM

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | SMALL | $480 | $0 | $0 | $480 | 09/18/2014 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| TREYGER, ILYA Y | 3761 | 604-540000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



Solvetum-Exhibit 1002-0276

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

1444 7590 06/18/2014

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

| EXAMINER | |
|---|---|
| TREYGER, ILYA Y | |
| ART UNIT | PAPER NUMBER |
| 3761 | |

DATE MAILED: 06/18/2014

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.





Solvetum-Exhibit 1002-0277

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Solvetum-Exhibit 1002-0278

| Notice of Allowability | Application No. 13/917,865 | Applicant(s) ADAHAN, CARMELI | |
|---|---|---|---|
| | Examiner ILYA TREYGER | Art Unit 3761 | AIA (First Inventor to File) Status No |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *06/02/2014*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-22*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**.

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☒ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/ILYA TREYGER/
Examiner, Art Unit 3761



Solvetum-Exhibit 1002-0279

1. The present application is being examined under the pre-AIA first to invent provisions.

**Examiner's Comment**

***Terminal Disclaimer***

2. The terminal disclaimer filed on 06/02/2014 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 8,506,554 has been reviewed and is accepted. The terminal disclaimer has been recorded.

**ALLOWABLE CLAIMS**

**3. Claims 1-22 are allowed.**

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILYA TREYGER whose telephone number is (571)270-3217. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tatyana Zalukaeva can be reached on 571-272-1115. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ILYA TREYGER/
Examiner, Art Unit 3761
/TATYANA ZALUKAEVA/

Supervisory Patent Examiner, Art Unit 3761

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | Examiner | Art Unit |
| | ILYA TREYGER | 3761 |

| CPC- SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| A61M1/00; A61F13/00; A61F13/02; A61M27/00 | 6/9/2014 | I. T. |

| CPC COMBINATION SETS - SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| US CLASSIFICATION SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 604 | 540-544 | 10/5/2010 | I. T. |

| SEARCH NOTES | | |
|---|---|---|
| Search Notes | Date | Examiner |
| EAST Search attached | 3/3/2014 | I. T. |
| Search updated | 6/9/2014 | I. T. |

| INTERFERENCE SEARCH | | | |
|---|---|---|---|
| US Class/ CPC Symbol | US Subclass / CPC Group | Date | Examiner |
| 604 | 540-544 | 6/9/2014 | I. T. |
| | PGPUB searched | 6/9/2014 | I. T. |

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

# BIB DATA SHEET

**CONFIRMATION NO. 7555**

| SERIAL NUMBER | FILING or 371(c) DATE<br>RULE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | 604 | 3761 | ADAHAN16A |

**APPLICANTS**

**INVENTORS**

Carmeli ADAHAN, Jerusalem, ISRAEL;

**** CONTINUING DATA ************************* I.T. 03/03/2014**

This application is a CON of 11/989,297 01/24/2008 PAT 8506554
which is a 371 of PCT/IL2005/000784 07/24/2005

**** FOREIGN APPLICATIONS ************************* I.T. 03/03/2014**

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
07/09/2013

| Foreign Priority claimed | ☐ Yes ☑ No | ☐ Met after Allowance | STATE OR COUNTRY | SHEETS DRAWINGS | TOTAL CLAIMS | INDEPENDENT CLAIMS |
|---|---|---|---|---|---|---|
| 35 USC 119(a-d) conditions met | ☐ Yes ☑ No | | | | | |
| Verified and Acknowledged | /ILYA Y TREYGER/ Examiner's Signature | Initials | ISRAEL | 2 | 22 | 3 |

**ADDRESS**

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006
UNITED STATES

**TITLE**

WOUND CLOSURE AND DRAINAGE SYSTEM

| FILING FEE RECEIVED | FEES: Authority has been given in Paper | ☐ All Fees |
|---|---|---|
| 810 | No._____ to charge/credit DEPOSIT ACCOUNT | ☐ 1.16 Fees (Filing) |
| | No._____ for following: | ☐ 1.17 Fees (Processing Ext. of time) |
| | | ☐ 1.18 Fees (Issue) |
| | | ☐ Other _____ |
| | | ☐ Credit |

| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | **Examiner** | **Art Unit** |
| | ILYA TREYGER | 3761 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | Rejected | - | Cancelled | N | Non-Elected | A | Appeal |
| = | Allowed | ÷ | Restricted | I | Interference | O | Objected |

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

| CLAIM | | DATE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Final | Original | 03/03/2014 | 06/09/2014 | | | | | | | |
| 1 | 1 | ✓ | = | | | | | | | |
| 2 | 2 | ✓ | = | | | | | | | |
| 3 | 3 | ✓ | = | | | | | | | |
| 4 | 4 | ✓ | = | | | | | | | |
| 5 | 5 | ✓ | = | | | | | | | |
| 6 | 6 | ✓ | = | | | | | | | |
| 7 | 7 | ✓ | = | | | | | | | |
| 8 | 8 | ✓ | = | | | | | | | |
| 9 | 9 | ✓ | = | | | | | | | |
| 10 | 10 | ✓ | = | | | | | | | |
| 11 | 11 | ✓ | = | | | | | | | |
| 12 | 12 | ✓ | = | | | | | | | |
| 13 | 13 | ✓ | = | | | | | | | |
| 14 | 14 | ✓ | = | | | | | | | |
| 15 | 15 | ✓ | = | | | | | | | |
| 16 | 16 | ✓ | = | | | | | | | |
| 17 | 17 | ✓ | = | | | | | | | |
| 18 | 18 | ✓ | = | | | | | | | |
| 19 | 19 | ✓ | = | | | | | | | |
| 20 | 20 | ✓ | = | | | | | | | |
| 21 | 21 | ✓ | = | | | | | | | |
| 22 | 22 | ✓ | = | | | | | | | |



Solvetum-Exhibit 1002-0284

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | **Examiner** | **Art Unit** |
| | ILYA TREYGER | 3761 |

| CPC | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Symbol** | | | | | | **Type** | **Version** |
| A61M | | 1 | / | 0023 | | F | 2013-01-01 |
| A61M | | 1 | / | 0031 | | I | 2013-01-01 |
| A61M | | 1 | / | 0072 | | I | 2014-02-04 |
| A61M | | 1 | / | 0088 | | I | 2013-01-01 |
| A61M | | 1 | / | 0066 | | I | 2013-01-01 |
| A61M | | 1 | / | 0027 | | I | 2014-02-04 |
| F04B | | 53 | / | 22 | | I | 2013-01-01 |
| A61M | | 1 | / | 0037 | | A | 2013-01-01 |
| A61M | | 1 | / | 0092 | | I | 2014-02-04 |
| F04B | | 45 | / | 047 | | I | 2013-01-01 |
| | | | / | | | | |
| | | | / | | | | |
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| CPC Combination Sets | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Set** | **Ranking** | **Version** |
| | | | / | | | | | |
| | | | / | | | | | |

| | | | |
|---|---|---|---|
| /ILYA TREYGER/<br>Examiner.Art Unit 3761 | 06/09/2014 | **Total Claims Allowed:** | |
| (Assistant Examiner) | (Date) | 22 | |
| /TATYANA ZALUKAEVA/<br>Supervisory Patent Examiner.Art Unit 3761 | 06/15/2014 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 1 |

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | **Examiner** | **Art Unit** |
| | ILYA TREYGER | 3761 |

| US ORIGINAL CLASSIFICATION | | INTERNATIONAL CLASSIFICATION | |
|---|---|---|---|
| CLASS | SUBCLASS | CLAIMED | NON-CLAIMED |
| 604 | 540 | A 6 1 M 1 / 00 (2006.0) | A 0 1 B 1 / 00 (2006.0) |
| | | | F 0 4 B 45 / 04 (2006.0) |

| CROSS REFERENCE(S) | | | | | |
|---|---|---|---|---|---|
| CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | |
| 604 | 35 | 305 | 306 | 307 | 308 |
| 604 | 313 | 317 | 318 | 319 | 320 |
| 604 | 321 | 322 | 323 | 541 | 542 |
| 604 | 543 | 544 | | | |
| 606 | 131 | | | | |

| | | | |
|---|---|---|---|
| /ILYA TREYGER/<br>Examiner.Art Unit 3761<br><br>(Assistant Examiner) | 06/09/2014<br><br>(Date) | **Total Claims Allowed:**<br>22 | |
| /TATYANA ZALUKAEVA/<br>Supervisory Patent Examiner.Art Unit 3761<br><br>(Primary Examiner) | 06/15/2014<br><br>(Date) | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>1 |

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 13917865 | ADAHAN, CARMELI |
| | **Examiner** | **Art Unit** |
| | ILYA TREYGER | 3761 |

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17 | 17 | | | | | | | | | | | | |
| 2 | 2 | 18 | 18 | | | | | | | | | | | | |
| 3 | 3 | 19 | 19 | | | | | | | | | | | | |
| 4 | 4 | 20 | 20 | | | | | | | | | | | | |
| 5 | 5 | 21 | 21 | | | | | | | | | | | | |
| 6 | 6 | 22 | 22 | | | | | | | | | | | | |
| 7 | 7 | | | | | | | | | | | | | | |
| 8 | 8 | | | | | | | | | | | | | | |
| 9 | 9 | | | | | | | | | | | | | | |
| 10 | 10 | | | | | | | | | | | | | | |
| 11 | 11 | | | | | | | | | | | | | | |
| 12 | 12 | | | | | | | | | | | | | | |
| 13 | 13 | | | | | | | | | | | | | | |
| 14 | 14 | | | | | | | | | | | | | | |
| 15 | 15 | | | | | | | | | | | | | | |
| 16 | 16 | | | | | | | | | | | | | | |

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|---|---|---|---|
| /ILYA TREYGER/<br>Examiner.Art Unit 3761 | 06/09/2014 | **Total Claims Allowed:** | |
| (Assistant Examiner) | (Date) | 22 | |
| /TATYANA ZALUKAEVA/<br>Supervisory Patent Examiner.Art Unit 3761 | 06/15/2014 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 1 |

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 0 | ("woundand(suctionvacuum)and(enclosuredressing)and((bleedinghole)(vacuumbreaker))").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:10 |
| L2 | 16732 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:10 |
| L3 | 24938 | (A61M1/00).IPCR. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:10 |
| L4 | 14598 | (A61F13/00).IPCR. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:10 |
| L5 | 9073 | (A61F13/02).IPCR. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:11 |
| L6 | 6328 | (A61M27/00).IPCR. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:11 |
| L7 | 1110 | 2 and 3 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:11 |
| L8 | 856 | 2 and 4 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:11 |
| L9 | 326 | 2 and 5 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:11 |
| L10 | 380 | 2 and 6 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/06/09 13:11 |
| L11 | 56 | ("3526224" \| "3715326" \| "3813466" \| "3920588" \| "4090010" \| "4101984" \| "4161948" \| "4173689" \| "4207128" \| "4265928" \| "4289125" \| "4459317" \| "4548844" \| "4585666" \| "4666437").PN. OR ("4770664").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/06/09 13:14 |
| L12 | 54 | ("4664662" \| "4928681" \| "4957795" \| "5340363" \| "5352508").PN. OR ("5540922").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/06/09 13:14 |
| L13 | 135 | ("0222690" \| "0697637" \| "0720812" \| "1384467" \| "1399095" \| "1777982" \| "1920808" \| "1979082" \| "2221758" \| "2443481" \| "2573791" \| "2577945" \| "2599523" \| "2601189" \| | US-PGPUB; USPAT; | OR | OFF | 2014/06/09 13:15 |

Solvetum-Exhibit 1002-0288

| | | | | | | |
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| L14 | 103 | ("0222690" \| "0697637" \| "0720812" \| "1384467" \| "1399095" \| "1777982" \| "1920808" \| "1979082" \| "2221758" \| "2443481" \| "2573791" \| "2577945" \| "2599523" \| "2601189" \| "2632443" \| "2706988" \| "2769892" \| "3026874" \| "3528416" \| "3596657" \| "3610238" \| "3610251" \| "3687143" \| "3691646" \| "3782377" \| "3814095" \| "3867939" \| "3881477" \| "4080971" \| "4134399" \| "4172495" \| "4279255" \| "4341209" \| "4382441" \| "4399816" \| "4484574" \| "4517972" \| "4540412" \| "4572188" \| "4628930" \| "4633863" \| "4641641" \| "4641643" \| "4667666" \| "4890608" \| "4962761" \| "4969881" \| "5003971" \| "5025777" \| "5060662" \| "5086763" \| "5107832" \| "5135518" \| "5144113" \| "5144958" \| "5170781" \| "5190031" \| "5230350" \| "5431622" \| "5531670" \| "5609619" \| "5649972").PN. OR ("6013097").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/06/09 13:15 |
| S1 | 53 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2010/10/05 16:32 |
| S2 | 11641 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:47 |
| S3 | 851 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:48 |
| S4 | 746 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:48 |
| S5 | 266 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:48 |
| S6 | 1805 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:49 |
| S7 | 1255 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:49 |
| S8 | 250 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:49 |
| S9 | 505 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2010/10/05 16:49 |
| S10 | 17 | S2 and S3 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:49 |
| S11 | 119 | S2 and S4 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:50 |
| S12 | 126 | S2 and S5 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:50 |
| S13 | 117 | S2 and S6 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:50 |
| S14 | 109 | S2 and S7 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:50 |
| S15 | 7 | S2 and S8 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2010/10/05 16:50 |
| S16 | 4 | S2 and S9 | US-PGPUB; USPAT; | OR | OFF | 2010/10/05 16:50 |

Solvetum-Exhibit 1002-0289

| | | | | | | |
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| | | | USOCR; EPO; JPO; DERWENT; IBM_TDB | | | |
| S17 | 63 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2010/10/05 16:51 |
| S18 | 99 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2010/10/05 16:52 |
| S19 | 73 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2010/10/05 16:52 |
| S20 | 154 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2010/10/05 16:52 |
| S21 | 54 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 11:54 |
| S22 | 12345 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S23 | 881 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S24 | 784 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S25 | 290 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S26 | 1923 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S27 | 1341 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S28 | 251 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S29 | 521 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 11:54 |
| S30 | 18 | S22 and S23 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S31 | 135 | S22 and S24 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S32 | 149 | S22 and S25 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S33 | 169 | S22 and S26 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S34 | 125 | S22 and S27 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S35 | 7 | S22 and S28 | US-PGPUB; | OR | OFF | 2011/04/15 |

Solvetum-Exhibit 1002-0290

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| S36 | 4 | S22 and S29 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 11:54 |
| S37 | 74 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 11:54 |
| S38 | 114 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 11:54 |
| S39 | 82 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 11:54 |
| S40 | 174 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 11:54 |
| S41 | 54 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S42 | 12345 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S43 | 881 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S44 | 784 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S45 | 290 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S46 | 1923 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S47 | 1341 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S48 | 251 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S49 | 521 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S50 | 18 | S42 and S43 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S51 | 135 | S42 and S44 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S52 | 149 | S42 and S45 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S53 | 169 | S42 and S46 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |

Solvetum-Exhibit 1002-0291

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| S54 | 125 | S42 and S47 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S55 | 7 | S42 and S48 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S56 | 4 | S42 and S49 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S57 | 74 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S58 | 114 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S59 | 82 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S60 | 174 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S61 | 54 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S62 | 12345 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S63 | 881 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S64 | 784 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S65 | 290 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S66 | 1923 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S67 | 1341 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S68 | 251 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S69 | 521 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/04/15 12:53 |
| S70 | 18 | S62 and S63 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S71 | 135 | S62 and S64 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S72 | 149 | S62 and S65 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |

Solvetum-Exhibit 1002-0292

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|---|---|---|---|---|---|---|
| S73 | 169 | S62 and S66 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S74 | 125 | S62 and S67 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S75 | 7 | S62 and S68 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S76 | 4 | S62 and S69 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/04/15 12:53 |
| S77 | 74 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S78 | 114 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S79 | 82 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S80 | 174 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/04/15 12:53 |
| S84 | 55 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S85 | 12846 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S86 | 902 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S87 | 815 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S88 | 308 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S89 | 2020 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S90 | 1424 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S91 | 253 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S92 | 529 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S93 | 21 | S85 and S86 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S94 | 150 | S85 and S87 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |

Solvetum-Exhibit 1002-0293

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|---|---|---|---|---|---|---|
| S95 | 164 | S85 and S88 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S96 | 214 | S85 and S89 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S97 | 137 | S85 and S90 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S98 | 8 | S85 and S91 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S99 | 5 | S85 and S92 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S100 | 88 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S101 | 133 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S102 | 94 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S103 | 200 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S104 | 55 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S105 | 12846 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S106 | 902 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S107 | 815 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S108 | 308 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S109 | 2020 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S110 | 1424 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S111 | 253 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S112 | 529 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S113 | 21 | S105 and S106 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2011/09/26 13:57 |

Solvetum-Exhibit 1002-0294

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|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| S114 | 150 | S105 and S107 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S115 | 164 | S105 and S108 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S116 | 214 | S105 and S109 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S117 | 137 | S105 and S110 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S118 | 8 | S105 and S111 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S119 | 5 | S105 and S112 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S120 | 88 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S121 | 133 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S122 | 94 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S123 | 200 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S124 | 55 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S125 | 12846 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S126 | 902 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S127 | 815 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S128 | 308 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S129 | 2020 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S130 | 1424 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S131 | 253 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |

Solvetum-Exhibit 1002-0295

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|---|---|---|---|---|---|---|
| S132 | 529 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S133 | 21 | S125 and S126 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S134 | 150 | S125 and S127 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S135 | 164 | S125 and S128 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S136 | 214 | S125 and S129 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S137 | 137 | S125 and S130 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S138 | 8 | S125 and S131 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S139 | 5 | S125 and S132 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S140 | 88 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S141 | 133 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S142 | 94 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S143 | 200 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S144 | 55 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S145 | 12846 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S146 | 902 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S147 | 815 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S148 | 308 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |

Solvetum-Exhibit 1002-0296

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|---|---|---|---|---|---|---|
| S149 | 2020 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S150 | 1424 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S151 | 253 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S152 | 529 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2011/09/26 13:57 |
| S153 | 21 | S145 and S146 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S154 | 150 | S145 and S147 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S155 | 164 | S145 and S148 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S156 | 214 | S145 and S149 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S157 | 137 | S145 and S150 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S158 | 8 | S145 and S151 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S159 | 5 | S145 and S152 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 13:57 |
| S160 | 88 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S161 | 133 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S162 | 94 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S163 | 200 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/09/26 13:57 |
| S164 | 26 | S100 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:02 |
| S165 | 32 | S101 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; | OR | OFF | 2011/09/26 14:02 |

Solvetum-Exhibit 1002-0297

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|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| S166 | 15 | S102 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:02 |
| S167 | 36 | S103 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:02 |
| S168 | 70 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:22 |
| S169 | 0 | S168 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:23 |
| S170 | 5 | S168 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:23 |
| S171 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:24 |
| S172 | 55 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:24 |
| S173 | 28 | S172 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:25 |
| S174 | 0 | S172 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:25 |
| S175 | 18 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:26 |
| S176 | 3 | S175 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2011/09/26 14:27 |
| S178 | 858 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/05/24 16:07 |
| S179 | 929 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/05/24 16:07 |
| S180 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S181 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S182 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S183 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S184 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0298

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|---|---|---|---|---|---|---|
| S185 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S186 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S187 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S188 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S189 | 33 | S181 and S182 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S190 | 172 | S181 and S183 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S191 | 217 | S181 and S184 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S192 | 348 | S181 and S185 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S193 | 176 | S181 and S186 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S194 | 9 | S181 and S187 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S195 | 8 | S181 and S188 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S196 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S197 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S198 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S199 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S200 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S201 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0299

| | | | | | | |
|---|---|---|---|---|---|---|
| S202 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S203 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S204 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S205 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S206 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S207 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S208 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S209 | 33 | S201 and S202 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S210 | 172 | S201 and S203 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S211 | 217 | S201 and S204 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S212 | 348 | S201 and S205 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S213 | 176 | S201 and S206 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S214 | 9 | S201 and S207 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S215 | 8 | S201 and S208 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S216 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S217 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S218 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S219 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S220 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0300

| | | | | | | |
|---|---|---|---|---|---|---|
| S221 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S222 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S223 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S224 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S225 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S226 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S227 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S228 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S229 | 33 | S221 and S222 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S230 | 172 | S221 and S223 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S231 | 217 | S221 and S224 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S232 | 348 | S221 and S225 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S233 | 176 | S221 and S226 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S234 | 9 | S221 and S227 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S235 | 8 | S221 and S228 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S236 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S237 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S238 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S239 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0301

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| S240 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S241 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S242 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S243 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S244 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S245 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S246 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S247 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S248 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S249 | 33 | S241 and S242 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S250 | 172 | S241 and S243 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S251 | 217 | S241 and S244 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S252 | 348 | S241 and S245 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S253 | 176 | S241 and S246 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S254 | 9 | S241 and S247 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S255 | 8 | S241 and S248 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S256 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S257 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S258 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0302

| | | | | | | |
|---|---|---|---|---|---|---|
| S259 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S260 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S261 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S262 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S263 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S264 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S265 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S266 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S267 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S268 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S269 | 33 | S261 and S262 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S270 | 172 | S261 and S263 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S271 | 217 | S261 and S264 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S272 | 348 | S261 and S265 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S273 | 176 | S261 and S266 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S274 | 9 | S261 and S267 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S275 | 8 | S261 and S268 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S276 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0303

| | | | | | | |
|---|---|---|---|---|---|---|
| S277 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S278 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S279 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S280 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S281 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S282 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S283 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S284 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S285 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S286 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S287 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S288 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S289 | 33 | S281 and S282 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S290 | 172 | S281 and S283 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S291 | 217 | S281 and S284 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S292 | 348 | S281 and S285 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S293 | 176 | S281 and S286 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S294 | 9 | S281 and S287 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S295 | 8 | S281 and S288 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0304

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| S296 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S297 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S298 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S299 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S300 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S301 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S302 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S303 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S304 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S305 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S306 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S307 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S308 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S309 | 33 | S301 and S302 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S310 | 172 | S301 and S303 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S311 | 217 | S301 and S304 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S312 | 348 | S301 and S305 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S313 | 176 | S301 and S306 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S314 | 9 | S301 and S307 | US-PGPUB; USPAT; | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0305

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|---|---|---|---|---|---|---|
| | | | USOCR; EPO; JPO; DERWENT; IBM_TDB | | | |
| S315 | 8 | S301 and S308 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S316 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S317 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S318 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S319 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S320 | 56 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S321 | 14131 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S322 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S323 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S324 | 371 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S325 | 2276 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S326 | 1612 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S327 | 255 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S328 | 579 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S329 | 33 | S321 and S322 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S330 | 172 | S321 and S323 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S331 | 217 | S321 and S324 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S332 | 348 | S321 and S325 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S333 | 176 | S321 and S326 | US-PGPUB; | OR | OFF | 2012/09/14 |

Solvetum-Exhibit 1002-0306

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 12:25 |
| S334 | 9 | S321 and S327 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S335 | 8 | S321 and S328 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S336 | 119 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S337 | 210 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S338 | 147 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S339 | 288 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2012/09/14 12:25 |
| S340 | 34 | S276 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S341 | 43 | S277 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S342 | 19 | S278 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S343 | 53 | S279 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S344 | 73 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S345 | 0 | S344 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S346 | 6 | S344 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S347 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; | OR | OFF | 2012/09/14 12:25 |

Solvetum-Exhibit 1002-0307

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| S348 | 63 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S349 | 33 | S348 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S350 | 0 | S348 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S351 | 21 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S352 | 4 | S351 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2012/09/14 12:25 |
| S353 | 879 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S354 | 959 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2012/09/14 12:25 |
| S359 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S360 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S361 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S362 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S363 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S364 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S365 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S366 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S367 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S368 | 39 | S360 and S361 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S369 | 191 | S360 and S362 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S370 | 252 | S360 and S363 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S371 | 415 | S360 and S364 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |

Solvetum-Exhibit 1002-0308

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|---|---|---|---|---|---|---|
| S372 | 201 | S360 and S365 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S373 | 9 | S360 and S366 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S374 | 9 | S360 and S367 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S375 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S376 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S377 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S378 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S379 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S380 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S381 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S382 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S383 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S384 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S385 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S386 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S387 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S388 | 39 | S380 and S381 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S389 | 191 | S380 and S382 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S390 | 252 | S380 and S383 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |

Solvetum-Exhibit 1002-0309

| | | | | | | |
|---|---|---|---|---|---|---|
| S391 | 415 | S380 and S384 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S392 | 201 | S380 and S385 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S393 | 9 | S380 and S386 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S394 | 9 | S380 and S387 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S395 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S396 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S397 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S398 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S399 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S400 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S401 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S402 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S403 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S404 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S405 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S406 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S407 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S408 | 39 | S400 and S401 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S409 | 191 | S400 and S402 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |

Solvetum-Exhibit 1002-0310

| | | | | | | |
|---|---|---|---|---|---|---|
| S410 | 252 | S400 and S403 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S411 | 415 | S400 and S404 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S412 | 201 | S400 and S405 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S413 | 9 | S400 and S406 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S414 | 9 | S400 and S407 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S415 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S416 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S417 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S418 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S419 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S420 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S421 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S422 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S423 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S424 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S425 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S426 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S427 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S428 | 39 | S420 and S421 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |

Solvetum-Exhibit 1002-0311

| | | | | | | |
|---|---|---|---|---|---|---|
| S429 | 191 | S420 and S422 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S430 | 252 | S420 and S423 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S431 | 415 | S420 and S424 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S432 | 201 | S420 and S425 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S433 | 9 | S420 and S426 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S434 | 9 | S420 and S427 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S435 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S436 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S437 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S438 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S439 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S440 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S441 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S442 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S443 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S444 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S445 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S446 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S447 | 596 | (606/131).CCLS. | US-PGPUB; | OR | OFF | 2013/04/03 |

Solvetum-Exhibit 1002-0312

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 13:34 |
| S448 | 39 | S440 and S441 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S449 | 191 | S440 and S442 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S450 | 252 | S440 and S443 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S451 | 415 | S440 and S444 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S452 | 201 | S440 and S445 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S453 | 9 | S440 and S446 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S454 | 9 | S440 and S447 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S455 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S456 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S457 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S458 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S459 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S460 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S461 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S462 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S463 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S464 | 2428 | (604/317-323).CCLS. | US-PGPUB; | OR | OFF | 2013/04/03 |

Solvetum-Exhibit 1002-0313

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 13:34 |
| S465 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S466 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S467 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S468 | 39 | S460 and S461 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S469 | 191 | S460 and S462 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S470 | 252 | S460 and S463 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S471 | 415 | S460 and S464 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S472 | 201 | S460 and S465 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S473 | 9 | S460 and S466 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S474 | 9 | S460 and S467 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S475 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S476 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S477 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S478 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S479 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S480 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S481 | 990 | (604/35).CCLS. | US-PGPUB; | OR | OFF | 2013/04/03 |

Solvetum-Exhibit 1002-0314

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 13:34 |
| S482 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S483 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S484 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S485 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S486 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S487 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S488 | 39 | S480 and S481 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S489 | 191 | S480 and S482 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S490 | 252 | S480 and S483 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S491 | 415 | S480 and S484 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S492 | 201 | S480 and S485 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S493 | 9 | S480 and S486 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S494 | 9 | S480 and S487 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S495 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S496 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S497 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S498 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S499 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |

Solvetum-Exhibit 1002-0315

| | | | | | | |
|---|---|---|---|---|---|---|
| S500 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S501 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S502 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S503 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S504 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S505 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S506 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S507 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:34 |
| S508 | 39 | S500 and S501 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S509 | 191 | S500 and S502 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S510 | 252 | S500 and S503 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S511 | 415 | S500 and S504 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S512 | 201 | S500 and S505 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S513 | 9 | S500 and S506 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S514 | 9 | S500 and S507 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S515 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S516 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S517 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |
| S518 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:34 |

Solvetum-Exhibit 1002-0316

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| S519 | 39 | S455 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S520 | 55 | S456 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S521 | 27 | S457 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S522 | 67 | S458 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S523 | 75 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S524 | 0 | S523 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S525 | 6 | S523 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S526 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S527 | 67 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S528 | 36 | S527 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S529 | 0 | S527 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S530 | 26 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:34 |
| S531 | 7 | S530 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S532 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S533 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S534 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0317

| | | | | | | |
|---|---|---|---|---|---|---|
| S535 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S536 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S537 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S538 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S539 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S540 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S541 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S542 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S543 | 39 | S535 and S536 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S544 | 191 | S535 and S537 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S545 | 252 | S535 and S538 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S546 | 415 | S535 and S539 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S547 | 201 | S535 and S540 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S548 | 9 | S535 and S541 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S549 | 9 | S535 and S542 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S550 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S551 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S552 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S553 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0318

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| S554 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S555 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S556 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S557 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S558 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S559 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S560 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S561 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S562 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S563 | 39 | S555 and S556 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S564 | 191 | S555 and S557 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S565 | 252 | S555 and S558 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S566 | 415 | S555 and S559 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S567 | 201 | S555 and S560 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S568 | 9 | S555 and S561 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S569 | 9 | S555 and S562 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S570 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S571 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S572 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0319

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USOCR | | | |
| S573 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S574 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S575 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S576 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S577 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S578 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S579 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S580 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S581 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S582 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S583 | 39 | S575 and S576 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S584 | 191 | S575 and S577 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S585 | 252 | S575 and S578 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S586 | 415 | S575 and S579 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S587 | 201 | S575 and S580 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S588 | 9 | S575 and S581 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S589 | 9 | S575 and S582 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S590 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0320

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USOCR | | | |
| S591 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S592 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S593 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S594 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S595 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S596 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S597 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S598 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S599 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S600 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S601 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S602 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S603 | 39 | S595 and S596 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S604 | 191 | S595 and S597 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S605 | 252 | S595 and S598 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S606 | 415 | S595 and S599 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S607 | 201 | S595 and S600 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S608 | 9 | S595 and S601 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S609 | 9 | S595 and S602 | US-PGPUB; | OR | OFF | 2013/04/03 |

Solvetum-Exhibit 1002-0321

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 13:35 |
| S610 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S611 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S612 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S613 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S614 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S615 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S616 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S617 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S618 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S619 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S620 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S621 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S622 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S623 | 39 | S615 and S616 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S624 | 191 | S615 and S617 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S625 | 252 | S615 and S618 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S626 | 415 | S615 and S619 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S627 | 201 | S615 and S620 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0322

| | | | | | | |
|---|---|---|---|---|---|---|
| S628 | 9 | S615 and S621 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S629 | 9 | S615 and S622 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S630 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S631 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S632 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S633 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S634 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S635 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S636 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S637 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S638 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S639 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S640 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S641 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S642 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S643 | 39 | S635 and S636 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S644 | 191 | S635 and S637 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S645 | 252 | S635 and S638 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S646 | 415 | S635 and S639 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0323

| | | | | | | |
|---|---|---|---|---|---|---|
| S647 | 201 | S635 and S640 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S648 | 9 | S635 and S641 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S649 | 9 | S635 and S642 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S650 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S651 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S652 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S653 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S654 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S655 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S656 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S657 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S658 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S659 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S660 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S661 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S662 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S663 | 39 | S655 and S656 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S664 | 191 | S655 and S657 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S665 | 252 | S655 and S658 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0324

| | | | | | | |
|---|---|---|---|---|---|---|
| S666 | 415 | S655 and S659 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S667 | 201 | S655 and S660 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S668 | 9 | S655 and S661 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S669 | 9 | S655 and S662 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S670 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S671 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S672 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S673 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S674 | 59 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S675 | 14871 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S676 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S677 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S678 | 409 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S679 | 2428 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S680 | 1726 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S681 | 256 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S682 | 596 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S683 | 39 | S675 and S676 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S684 | 191 | S675 and S677 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0325

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| S685 | 252 | S675 and S678 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S686 | 415 | S675 and S679 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S687 | 201 | S675 and S680 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S688 | 9 | S675 and S681 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S689 | 9 | S675 and S682 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S690 | 130 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S691 | 246 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S692 | 175 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S693 | 333 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2013/04/03 13:35 |
| S694 | 39 | S630 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S695 | 55 | S631 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S696 | 27 | S632 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S697 | 67 | S633 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S698 | 75 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0326

| | | | | | | |
|---|---|---|---|---|---|---|
| S699 | 0 | S698 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S700 | 6 | S698 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S701 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S702 | 67 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S703 | 36 | S702 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S704 | 0 | S702 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S705 | 26 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S706 | 7 | S705 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2013/04/03 13:35 |
| S707 | 940 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S708 | 990 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2013/04/03 13:35 |
| S715 | 2 | ("20050148913" \| "5578006" \| "6817996").PN. | USPAT | OR | OFF | 2013/05/08 11:17 |
| S716 | 2 | ("20050148913" \| "5578006" \| "6817996").PN. | USPAT | OR | OFF | 2013/05/08 11:19 |
| S717 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S718 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S719 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S720 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S721 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S722 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S723 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S724 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S725 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S726 | 48 | S718 and S719 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0327

| | | | | | | |
|---|---|---|---|---|---|---|
| S727 | 215 | S718 and S720 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S728 | 305 | S718 and S721 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S729 | 552 | S718 and S722 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S730 | 258 | S718 and S723 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S731 | 14 | S718 and S724 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S732 | 24 | S718 and S725 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S733 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S734 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S735 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S736 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S737 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S738 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S739 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S740 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S741 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S742 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S743 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S744 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S745 | 649 | (606/131).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0328

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:23 |
| S746 | 48 | S738 and S739 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S747 | 215 | S738 and S740 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S748 | 305 | S738 and S741 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S749 | 552 | S738 and S742 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S750 | 258 | S738 and S743 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S751 | 14 | S738 and S744 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S752 | 24 | S738 and S745 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S753 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S754 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S755 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S756 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S757 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S758 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S759 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S760 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S761 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S762 | 2706 | (604/317-323).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0329

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:23 |
| S763 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S764 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S765 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S766 | 48 | S758 and S759 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S767 | 215 | S758 and S760 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S768 | 305 | S758 and S761 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S769 | 552 | S758 and S762 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S770 | 258 | S758 and S763 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S771 | 14 | S758 and S764 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S772 | 24 | S758 and S765 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S773 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S774 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S775 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S776 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S777 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S778 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S779 | 1036 | (604/35).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0330

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:23 |
| S780 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S781 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S782 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S783 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S784 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S785 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S786 | 48 | S778 and S779 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S787 | 215 | S778 and S780 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S788 | 305 | S778 and S781 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S789 | 552 | S778 and S782 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S790 | 258 | S778 and S783 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S791 | 14 | S778 and S784 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S792 | 24 | S778 and S785 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S793 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S794 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S795 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S796 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S797 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0331

| | | | | | | |
|---|---|---|---|---|---|---|
| S798 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S799 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S800 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S801 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S802 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S803 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S804 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S805 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S806 | 48 | S798 and S799 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S807 | 215 | S798 and S800 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S808 | 305 | S798 and S801 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S809 | 552 | S798 and S802 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S810 | 258 | S798 and S803 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S811 | 14 | S798 and S804 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S812 | 24 | S798 and S805 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S813 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S814 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S815 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S816 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0332

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| S817 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S818 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S819 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S820 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S821 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S822 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S823 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S824 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S825 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S826 | 48 | S818 and S819 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S827 | 215 | S818 and S820 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S828 | 305 | S818 and S821 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S829 | 552 | S818 and S822 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S830 | 258 | S818 and S823 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S831 | 14 | S818 and S824 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S832 | 24 | S818 and S825 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S833 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S834 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S835 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0333

| | | | | | | |
|---|---|---|---|---|---|---|
| S836 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S837 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S838 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S839 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S840 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S841 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S842 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S843 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S844 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S845 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S846 | 48 | S838 and S839 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S847 | 215 | S838 and S840 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S848 | 305 | S838 and S841 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S849 | 552 | S838 and S842 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S850 | 258 | S838 and S843 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S851 | 14 | S838 and S844 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S852 | 24 | S838 and S845 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S853 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0334

| | | | | | | |
|---|---|---|---|---|---|---|
| S854 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S855 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S856 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S857 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S858 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S859 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S860 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S861 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S862 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S863 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S864 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S865 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S866 | 48 | S858 and S859 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S867 | 215 | S858 and S860 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S868 | 305 | S858 and S861 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S869 | 552 | S858 and S862 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S870 | 258 | S858 and S863 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S871 | 14 | S858 and S864 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S872 | 24 | S858 and S865 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0335

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| S873 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S874 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S875 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S876 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S877 | 45 | S813 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S878 | 72 | S814 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S879 | 38 | S815 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S880 | 86 | S816 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S881 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S882 | 0 | S881 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S883 | 7 | S881 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S884 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S885 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S886 | 43 | S885 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S887 | 0 | S885 and (air adj hole) | US-PGPUB; USPAT; EPO; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0336

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| S888 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S889 | 10 | S888 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S890 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S891 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S892 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S893 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S894 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S895 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S896 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S897 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S898 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S899 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S900 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S901 | 48 | S893 and S894 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S902 | 215 | S893 and S895 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S903 | 305 | S893 and S896 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S904 | 552 | S893 and S897 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S905 | 258 | S893 and S898 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S906 | 14 | S893 and S899 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S907 | 24 | S893 and S900 | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0337

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USOCR; EPO; JPO; DERWENT; IBM_TDB | | | |
| S908 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S909 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S910 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S911 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S912 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S913 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S914 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S915 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S916 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S917 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S918 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S919 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S920 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S921 | 48 | S913 and S914 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S922 | 215 | S913 and S915 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S923 | 305 | S913 and S916 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S924 | 552 | S913 and S917 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S925 | 258 | S913 and S918 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S926 | 14 | S913 and S919 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0338

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| S927 | 24 | S913 and S920 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S928 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S929 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S930 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S931 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S932 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S933 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S934 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S935 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S936 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S937 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S938 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S939 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S940 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S941 | 48 | S933 and S934 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S942 | 215 | S933 and S935 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S943 | 305 | S933 and S936 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S944 | 552 | S933 and S937 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0339

| | | | | | | |
|---|---|---|---|---|---|---|
| S945 | 258 | S933 and S938 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S946 | 14 | S933 and S939 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S947 | 24 | S933 and S940 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S948 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S949 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S950 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S951 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S952 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S953 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S954 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S955 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S956 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S957 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S958 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S959 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S960 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S961 | 48 | S953 and S954 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S962 | 215 | S953 and S955 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S963 | 305 | S953 and S956 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0340

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|---|---|---|---|---|---|---|
| S964 | 552 | S953 and S957 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S965 | 258 | S953 and S958 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S966 | 14 | S953 and S959 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S967 | 24 | S953 and S960 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S968 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S969 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S970 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S971 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S972 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S973 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S974 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S975 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S976 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S977 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S978 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S979 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S980 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S981 | 48 | S973 and S974 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S982 | 215 | S973 and S975 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0341

| | | | | | | |
|---|---|---|---|---|---|---|
| S983 | 305 | S973 and S976 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S984 | 552 | S973 and S977 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S985 | 258 | S973 and S978 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S986 | 14 | S973 and S979 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S987 | 24 | S973 and S980 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S988 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S989 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S990 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S991 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S992 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S993 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S994 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S995 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S996 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S997 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S998 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S999 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1000 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1001 | 48 | S993 and S994 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0342

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| S1002 | 215 | S993 and S995 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1003 | 305 | S993 and S996 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1004 | 552 | S993 and S997 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1005 | 258 | S993 and S998 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1006 | 14 | S993 and S999 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1007 | 24 | S993 and S1000 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1008 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1009 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1010 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1011 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1012 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1013 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1014 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1015 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1016 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1017 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1018 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1019 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0343

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|---|---|---|---|---|---|---|
| S1020 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1021 | 48 | S1013 and S1014 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1022 | 215 | S1013 and S1015 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1023 | 305 | S1013 and S1016 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1024 | 552 | S1013 and S1017 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1025 | 258 | S1013 and S1018 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1026 | 14 | S1013 and S1019 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1027 | 24 | S1013 and S1020 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1028 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1029 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1030 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1031 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1032 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1033 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1034 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1035 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1036 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0344

| | | | | | | |
|---|---|---|---|---|---|---|
| S1037 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1038 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1039 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1040 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1041 | 48 | S1033 and S1034 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1042 | 215 | S1033 and S1035 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1043 | 305 | S1033 and S1036 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1044 | 552 | S1033 and S1037 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1045 | 258 | S1033 and S1038 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1046 | 14 | S1033 and S1039 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1047 | 24 | S1033 and S1040 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1048 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1049 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1050 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1051 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1052 | 45 | S988 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1053 | 72 | S989 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0345

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | DERWENT; IBM_TDB | | | |
| S1054 | 38 | S990 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1055 | 86 | S991 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1056 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1057 | 0 | S1056 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1058 | 7 | S1056 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1059 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1060 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1061 | 43 | S1060 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1062 | 0 | S1060 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1063 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1064 | 10 | S1063 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1065 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1066 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1067 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1068 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1069 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1070 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1071 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0346

| | | | | | | |
|---|---|---|---|---|---|---|
| S1072 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1073 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1074 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1075 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1076 | 48 | S1068 and S1069 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1077 | 215 | S1068 and S1070 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1078 | 305 | S1068 and S1071 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1079 | 552 | S1068 and S1072 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1080 | 258 | S1068 and S1073 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1081 | 14 | S1068 and S1074 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1082 | 24 | S1068 and S1075 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1083 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1084 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1085 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1086 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1087 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1088 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0347

| | | | | | | |
|---|---|---|---|---|---|---|
| S1089 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1090 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1091 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1092 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1093 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1094 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1095 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1096 | 48 | S1088 and S1089 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1097 | 215 | S1088 and S1090 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1098 | 305 | S1088 and S1091 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1099 | 552 | S1088 and S1092 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1100 | 258 | S1088 and S1093 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1101 | 14 | S1088 and S1094 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1102 | 24 | S1088 and S1095 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1103 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1104 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1105 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1106 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1107 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0348

| | | | | | | |
|---|---|---|---|---|---|---|
| S1108 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1109 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1110 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1111 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1112 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1113 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1114 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1115 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1116 | 48 | S1108 and S1109 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1117 | 215 | S1108 and S1110 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1118 | 305 | S1108 and S1111 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1119 | 552 | S1108 and S1112 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1120 | 258 | S1108 and S1113 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1121 | 14 | S1108 and S1114 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1122 | 24 | S1108 and S1115 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1123 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1124 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1125 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1126 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0349

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| S1127 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1128 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1129 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1130 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1131 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1132 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1133 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1134 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1135 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1136 | 48 | S1128 and S1129 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1137 | 215 | S1128 and S1130 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1138 | 305 | S1128 and S1131 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1139 | 552 | S1128 and S1132 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1140 | 258 | S1128 and S1133 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1141 | 14 | S1128 and S1134 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1142 | 24 | S1128 and S1135 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1143 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1144 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1145 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0350

| | | | | | | |
|---|---|---|---|---|---|---|
| S1146 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1147 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1148 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1149 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1150 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1151 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1152 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1153 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1154 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1155 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1156 | 48 | S1148 and S1149 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1157 | 215 | S1148 and S1150 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1158 | 305 | S1148 and S1151 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1159 | 552 | S1148 and S1152 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1160 | 258 | S1148 and S1153 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1161 | 14 | S1148 and S1154 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1162 | 24 | S1148 and S1155 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1163 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |

| | | | | | | |
|---|---|---|---|---|---|---|
| S1164 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1165 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1166 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1167 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1168 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1169 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1170 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1171 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1172 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1173 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1174 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1175 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1176 | 48 | S1168 and S1169 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1177 | 215 | S1168 and S1170 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1178 | 305 | S1168 and S1171 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1179 | 552 | S1168 and S1172 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1180 | 258 | S1168 and S1173 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1181 | 14 | S1168 and S1174 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1182 | 24 | S1168 and S1175 | US-PGPUB; USPAT; USOCR; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0352

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|---|---|---|---|---|---|---|
| | | | EPO; JPO; DERWENT; IBM_TDB | | | |
| S1183 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1184 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1185 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1186 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1187 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1188 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1189 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1190 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1191 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1192 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1193 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1194 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1195 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1196 | 48 | S1188 and S1189 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1197 | 215 | S1188 and S1190 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1198 | 305 | S1188 and S1191 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1199 | 552 | S1188 and S1192 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1200 | 258 | S1188 and S1193 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1201 | 14 | S1188 and S1194 | US-PGPUB; USPAT; | OR | OFF | 2014/03/03 14:23 |

Solvetum-Exhibit 1002-0353

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|---|---|---|---|---|---|---|
| | | | USOCR; EPO; JPO; DERWENT; IBM_TDB | | | |
| S1202 | 24 | S1188 and S1195 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1203 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1204 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1205 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1206 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1207 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1208 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1209 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1210 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1211 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1212 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1213 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1214 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1215 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:23 |
| S1216 | 48 | S1208 and S1209 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1217 | 215 | S1208 and S1210 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1218 | 305 | S1208 and S1211 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1219 | 552 | S1208 and S1212 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1220 | 258 | S1208 and S1213 | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0354

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | | | 14:23 |
| S1221 | 14 | S1208 and S1214 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1222 | 24 | S1208 and S1215 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1223 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1224 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1225 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1226 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:23 |
| S1227 | 45 | S1163 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1228 | 72 | S1164 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1229 | 38 | S1165 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:23 |
| S1230 | 86 | S1166 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1231 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1232 | 0 | S1231 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1233 | 7 | S1231 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1234 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0355

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|---|---|---|---|---|---|---|
| | | | IBM_TDB | | | |
| S1235 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1236 | 43 | S1235 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1237 | 0 | S1235 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1238 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1239 | 10 | S1238 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1240 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1241 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1242 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1243 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1244 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1245 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1246 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1247 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1248 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1249 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1250 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1251 | 48 | S1243 and S1244 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1252 | 215 | S1243 and S1245 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1253 | 305 | S1243 and S1246 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1254 | 552 | S1243 and S1247 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0356

| | | | | | | |
|---|---|---|---|---|---|---|
| S1255 | 258 | S1243 and S1248 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1256 | 14 | S1243 and S1249 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1257 | 24 | S1243 and S1250 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1258 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1259 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1260 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1261 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1262 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1263 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1264 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1265 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1266 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1267 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1268 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1269 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1270 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1271 | 48 | S1263 and S1264 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1272 | 215 | S1263 and S1265 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1273 | 305 | S1263 and S1266 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0357

| | | | | | | |
|---|---|---|---|---|---|---|
| S1274 | 552 | S1263 and S1267 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1275 | 258 | S1263 and S1268 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1276 | 14 | S1263 and S1269 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1277 | 24 | S1263 and S1270 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1278 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1279 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1280 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1281 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1282 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1283 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1284 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1285 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1286 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1287 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1288 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1289 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1290 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1291 | 48 | S1283 and S1284 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1292 | 215 | S1283 and S1285 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0358

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|---|---|---|---|---|---|---|
| S1293 | 305 | S1283 and S1286 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1294 | 552 | S1283 and S1287 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1295 | 258 | S1283 and S1288 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1296 | 14 | S1283 and S1289 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1297 | 24 | S1283 and S1290 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1298 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1299 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1300 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1301 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1302 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1303 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1304 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1305 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1306 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1307 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1308 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1309 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1310 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1311 | 48 | S1303 and S1304 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0359

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|---|---|---|---|---|---|---|
| S1312 | 215 | S1303 and S1305 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1313 | 305 | S1303 and S1306 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1314 | 552 | S1303 and S1307 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1315 | 258 | S1303 and S1308 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1316 | 14 | S1303 and S1309 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1317 | 24 | S1303 and S1310 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1318 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1319 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1320 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1321 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1322 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1323 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1324 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1325 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1326 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1327 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1328 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1329 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1330 | 649 | (606/131).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0360

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:24 |
| S1331 | 48 | S1323 and S1324 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1332 | 215 | S1323 and S1325 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1333 | 305 | S1323 and S1326 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1334 | 552 | S1323 and S1327 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1335 | 258 | S1323 and S1328 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1336 | 14 | S1323 and S1329 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1337 | 24 | S1323 and S1330 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1338 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1339 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1340 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1341 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1342 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1343 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1344 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1345 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1346 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1347 | 2706 | (604/317-323).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0361

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:24 |
| S1348 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1349 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1350 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1351 | 48 | S1343 and S1344 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1352 | 215 | S1343 and S1345 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1353 | 305 | S1343 and S1346 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1354 | 552 | S1343 and S1347 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1355 | 258 | S1343 and S1348 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1356 | 14 | S1343 and S1349 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1357 | 24 | S1343 and S1350 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1358 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1359 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1360 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1361 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1362 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1363 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1364 | 1036 | (604/35).CCLS. | US-PGPUB; | OR | OFF | 2014/03/03 |

Solvetum-Exhibit 1002-0362

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT | | | 14:24 |
| S1365 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1366 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1367 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1368 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1369 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1370 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1371 | 48 | S1363 and S1364 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1372 | 215 | S1363 and S1365 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1373 | 305 | S1363 and S1366 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1374 | 552 | S1363 and S1367 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1375 | 258 | S1363 and S1368 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1376 | 14 | S1363 and S1369 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1377 | 24 | S1363 and S1370 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1378 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1379 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1380 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1381 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1382 | 61 | ((CARMELI) near2 (ADAHAN)).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0363

| | | | | | | |
|---|---|---|---|---|---|---|
| S1383 | 16249 | wound and (suction vacuum) and (enclosure dressing) and ((bleeding hole) (vacuum breaker)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1384 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1385 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1386 | 482 | (604/313).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1387 | 2706 | (604/317-323).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1388 | 1944 | (604/540-544).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1389 | 265 | (604/902).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1390 | 649 | (606/131).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1391 | 48 | S1383 and S1384 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1392 | 215 | S1383 and S1385 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1393 | 305 | S1383 and S1386 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1394 | 552 | S1383 and S1387 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1395 | 258 | S1383 and S1388 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1396 | 14 | S1383 and S1389 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1397 | 24 | S1383 and S1390 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1398 | 146 | ("1251258" \| "3171410" \| "3486504").PN. OR ("3874387").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1399 | 309 | ("3026874" \| "3486504" \| "4540412" \| "4759354" \| "4969880").PN. OR ("5149331").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1400 | 222 | ("4743232" \| "5230350").PN. OR ("5344415").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |
| S1401 | 411 | ("1355846" \| "2547758" \| "2632443" \| "2682873" \| "2969057" \| "3367332" \| "3648692" \| "3682180" \| "3826254" \| "4080970" \| "4096853" \| "4139004" \| "4165748" \| "4245630" \| "4261363" \| "4275721" \| "4297995" \| "4333468" \| "4373519" \| "4382441" \| "4392853" \| "4392858" \| "4419097" \| "4475909" \| "4480638" \| "4525166" \| "4525374" \| "4540412" \| "4543100" \| "4551139" \| "4569348" \| "4605399" \| "4608041" \| "4640688" \| "4655754" \| "4733659" \| "4743232" \| "4787888" \| "4826949" \| "4838883" \| "4840187" \| "4863449" \| "4872450" \| "4878901" \| "4897081" \| "4906233" \| "4906240" \| "4919654" \| "4941882" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0364

| | | | | | | |
|---|---|---|---|---|---|---|
| | | "4953565" \| "4969880" \| "4985019" \| "5037397" \| "5100396" \| "5149331" \| "5167613" \| "5176663" \| "5261893" \| "5298015" \| "5344415" \| "5358494" \| "5556375" \| "5607388" \| "5636643" \| "5645081").PN. OR ("6071267").URPN. | | | | |
| S1402 | 45 | S1338 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1403 | 72 | S1339 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1404 | 38 | S1340 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1405 | 86 | S1341 and (vent venting ventillation) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1406 | 80 | "4108574" "4208171" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1407 | 0 | S1406 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1408 | 7 | S1406 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1409 | 6 | "20040015042" "20050180868" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1410 | 75 | "4552552" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1411 | 43 | S1410 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1412 | 0 | S1410 and (air adj hole) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1413 | 30 | "5116206" "7503910" | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1414 | 10 | S1413 and (vent venting) | US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB | OR | OFF | 2014/03/03 14:24 |
| S1415 | 1029 | (604/305-308).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1416 | 1036 | (604/35).CCLS. | US-PGPUB; USPAT | OR | OFF | 2014/03/03 14:24 |
| S1417 | 2 | ("20050148913" \| "5578006" \| "6817996").PN. | USPAT | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0365

| | | | | | | |
|---|---|---|---|---|---|---|
| S1418 | 2 | ("20050148913" \| "5578006" \| "6817996").PN. | USPAT | OR | OFF | 2014/03/03 14:24 |

**EAST Search History (Interference)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L15 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/06/09 13:16 |
| S81 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2011/04/15 13:00 |
| S177 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2011/09/26 13:57 |
| S355 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2012/09/14 12:25 |
| S356 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2012/09/14 12:25 |
| S357 | 0 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | USPAT; UPAD | OR | OFF | 2012/09/14 12:30 |
| S358 | 1 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | US-PGPUB | OR | OFF | 2012/09/14 12:30 |
| S709 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2013/04/03 13:34 |
| S710 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2013/04/03 13:35 |
| S711 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2013/04/03 13:35 |

Solvetum-Exhibit 1002-0366

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|---|---|---|---|---|---|---|
| S712 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2013/04/03 13:35 |
| S713 | 0 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | USPAT; UPAD | OR | OFF | 2013/04/03 13:35 |
| S714 | 1 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | US-PGPUB | OR | OFF | 2013/04/03 13:35 |
| S1419 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| S1420 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| S1421 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| S1422 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| S1423 | 1 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | USPAT; UPAD | OR | OFF | 2014/03/03 14:23 |
| S1424 | 2 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:23 |
| S1425 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |
| S1426 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |
| S1427 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and | US-PGPUB | OR | OFF | 2014/03/03 14:24 |

Solvetum-Exhibit 1002-0367

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| | | first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | | | | |
| S1428 | 0 | pressure and regulating and device and sealed and vial and wheath and cap and connector and positioned and within and bag and interior and surface and outer and adapted and expanded and unfolded and compensat and changes and volume and medical and fluid and move and first and orientation and portion and partially and unexpanded and folded and second and lubricant and layer and impermeable and impeding and passage and between and regulates and withdrawn and equilibrate and opposite and reduces and friction.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |
| S1429 | 1 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | USPAT; UPAD | OR | OFF | 2014/03/03 14:24 |
| S1430 | 2 | enclosure and applying and negative and pressure and wound and attachable and circumference and confined and volume and tube and outlet and connectable and vacuum and source and venting and arrangement and calibrated and orifice and restrict and flow and ambient and air.clm. | US-PGPUB | OR | OFF | 2014/03/03 14:24 |

**6/9/2014 1:16:37 PM**
**C:\Users\itreyger\Documents\EAST\Workspaces\13917865.wsp**

# PRINTER RUSH

## (PTO ASSISTANCE)

| | | | | | |
|---|---|---|---|---|---|
| **Application:** | **13917865** | **Examiner:** | **Zalukaeva** | **GAU:** | **3761** |
| **From:** | **Shirley Winslow** | **Location:** | **IDC** | **Creation Date:** | **08/04/2014** |

Tracking #: Week Date: 06/23/2014

| DOC CODE | DOC DATE | MISCELLANEOUS |
|---|---|---|
| ☐ 1449 | | ☐ Continuing Data |
| ☐ IDS | | ☐ Foreign Priority |
| ☐ CLM | | ☐ Document Legibility |
| ☐ IIFW/FWCLM | | ☐ Fees |
| ☐ SRFW | | ☐ Petition (TC) |
| ☐ DRW | | ☒ Other |
| ☐ OATH | | |
| ☐ 312 | | |
| ☐ SPEC | | |

**[RUSH] Message:**

Abstract does not end with a period - incomplete. (ABST dated 6/14/2013)

(ends with "...disposable elements ")

Please advise
thank you

**[XRUSH] Response:**

Initials: _____

Examiner: PUBS contacts - for DESIGNS: Don Fairchild, 703-756-1566; for ALL OTHER files: Bernadette Queen, 703-756-1565.
NOTE: This form will be included as part of the official USPTO record with the response document coded as XRUSH.
REV: Oct 11

# PRINTER RUSH

## (PTO ASSISTANCE)

| | | | | | |
|---|---|---|---|---|---|
| **Application:** | **13917865** | **Examiner:** | **Zalukaeva** | **GAU:** | **3761** |
| **From:** | **Shirley Winslow** | **Location:** | **IDC** | **Creation Date:** | **08/04/2014** |

Tracking #: Week Date: 06/23/2014

| DOC CODE | DOC DATE | MISCELLANEOUS |
|---|---|---|
| ☐ 1449 | | ☐ Continuing Data |
| ☐ IDS | | ☐ Foreign Priority |
| ☐ CLM | | ☐ Document Legibility |
| ☐ IIFW/FWCLM | | ☐ Fees |
| ☐ SRFW | | ☐ Petition (TC) |
| ☐ DRW | | ☒ Other |
| ☐ OATH | | |
| ☐ 312 | | |
| ☐ SPEC | | |

**[RUSH] Message:**

Abstract does not end with a period - incomplete. (ABST dated 6/14/2013)

(ends with "...disposable elements ")

Please advise
thank you

**[XRUSH] Response:**

Corrected.

Initials: /I.T./

Examiner: PUBS contacts - for DESIGNS: Don Fairchild, 703-756-1566; for ALL OTHER files: Bernadette Queen, 703-756-1565.
NOTE: This form will be included as part of the official USPTO record with the response document coded as XRUSH.
REV: Oct 11

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

1444 7590 08/08/2014

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

| EXAMINER | |
|---|---|
| TREYGER, ILYA Y | |
| ART UNIT | PAPER NUMBER |
| 3761 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 08/08/2014 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



Solvetum-Exhibit 1002-0371

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U.S. Patent and Trademark Office
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Alexandria, Virginia 22313-1450

| APPLICATION NO./ CONTROL NO. | FILING DATE | FIRST NAMED INVENTOR / PATENT IN REEXAMINATION | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 13/917,865 | 14 June, 2013 | ADAHAN, CARMELI | ADAHAN16A |

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

| EXAMINER | |
|---|---|
| ILYA TREYGER | |
| ART UNIT | PAPER |
| 3761 | 20140805 |

DATE MAILED:

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner for Patents**

Abstract ends with "…disposable elements." - with a period!

| | |
|---|---|
| /TATYANA ZALUKAEVA/<br>Supervisory Patent Examiner, Art Unit 3761 | /ILYA TREYGER/<br>Examiner, Art Unit 3761 |

PTO-90C (Rev.04-03)

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail** **Mail Stop ISSUE FEE**
**Commissioner for Patents**
**P.O. Box 1450**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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1444 7590 06/18/2014
Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|---|
| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

TITLE OF INVENTION: WOUND CLOSURE AND DRAINAGE SYSTEM

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | SMALL | $480 | $0 | $0 | $480 | 09/18/2014 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| TREYGER, ILYA Y | 3761 | 604-540000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Browdy and Neimark, PLLC
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☒ Payment by credit card. ~~Form PTO-2038 is attached~~.
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 02-4035 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /rlb/ Date September 15, 2014
Typed or printed name Roger L. Browdy Registration No. 25,618



Solvetum-Exhibit 1002-0373

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 13917865 |
| **Filing Date:** | 14-Jun-2013 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Filer:** | Roger Lowen Browdy/Cheryl Lynn Crandell |
| **Attorney Docket Number:** | ADAHAN16A |

Filed as Small Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| Utility Appl Issue Fee | 2501 | 1 | 480 | 480 |
| Publ. Fee- Early, Voluntary, or Normal | 1504 | 1 | 0 | 0 |

Solvetum-Exhibit 1002-0374

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **480** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 20135953 |
| **Application Number:** | 13917865 |
| **International Application Number:** | |
| **Confirmation Number:** | 7555 |
| **Title of Invention:** | WOUND CLOSURE AND DRAINAGE SYSTEM |
| **First Named Inventor/Applicant Name:** | Carmeli ADAHAN |
| **Customer Number:** | 1444 |
| **Filer:** | Roger Lowen Browdy/Cheryl Lynn Crandell |
| **Filer Authorized By:** | Roger Lowen Browdy |
| **Attorney Docket Number:** | ADAHAN16A |
| **Receipt Date:** | 15-SEP-2014 |
| **Filing Date:** | 14-JUN-2013 |
| **Time Stamp:** | 12:55:35 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $480 |
| RAM confirmation Number | 9599 |
| Deposit Account | 024035 |
| Authorized User | BROWDY, ROGER L. |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Issue Fee Payment (PTO-85B) | 2014-09-15-issuefeetransmittal-Adahan16a.pdf | 90336<br>f6faac1d11fa32b42678e692afaad0cbaa398496 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 32283<br>2e58b73343d89e2059eb07ffbfe0da985ee60515 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 122619 | | |

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**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

| Receipt date: 06/14/2013 | Application Number | 13917865 - GAU: 3761 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** | Filing Date | 2013-06-13 |
| **( Not for submission under 37 CFR 1.99)** | First Named Inventor | Carmeli ADAHAN |
| | Art Unit | 3761 |
| | Examiner Name | /Ilya Treyger/ |
| | Attorney Docket Number | ADAHAN16A |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 31 | 5645081 | A | 1997-07-08 | ARGENTA. et al. | |
| | 32 | 5776119 | A | 1998-07-07 | BILBO, et al. | |
| | 33 | 7229422 | B2 | 2007-06-12 | KLOBE | |
| | 34 | 5941859 | A | August 24, 1999 ~~1997-03-17~~ | LERMAN | |
| Change(s) applied to document, /N.W.S./ 8/4/2014 | 35 | 3516160 | A | 1970-06-23 | LEFFLER | |

If you wish to add additional U.S. Patent citation information please click the Add button. Add

**U.S.PATENT APPLICATION PUBLICATIONS** Remove

| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 20050148913 | A1 | 2005-07-07 | WESTON | |
| | 2 | 20040015042 | A1 | 2004-01-22 | VINCENT, et al. | |
| | 3 | 20050180868 | A1 | 2005-08-18 | MILLER | |
| | 4 | 20050004534 | A1 | 2005-01-06 | LOCKWOOD, et al. | |



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

Solvetum-Exhibit-1002-0378

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | |
| Filing Date | 2013-06-13 |
| First Named Inventor | Carmeli ADAHAN |
| Art Unit | 3761 |
| Examiner Name | /Ilya Treyger/ |
| Attorney Docket Number | ADAHAN16A |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| Change(s) applied to document, /N.W.S./ 8/4/2014 | 1 | 5578006 | A | 1996-11-26 | ~~STEVENS~~ Schon | |
| | 2 | 6817996 | B2 | 2004-11-16 | FARD et al. | |
| | 3 | 4583970 | | 1986-04-22 | KIRCHNER | |
| | 4 | 5947923 | A | 1999-09-07 | UEHARA et al. | |
| | 5 | 6257847 | B1 | 2001-07-10 | SILVER, et al. | |
| | 6 | 7255681 | B1 | 2007-08-14 | SILVER, et al | |
| | 7 | 4108574 | | 1978-08-22 | BARTLEY, et al. | |
| | 8 | 4208171 | | 1980-06-17 | JONSSON | |



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.T./

Solvetum-Exhibit-1002-0379

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 10/14/2014 | 8858534 | ADAHAN16A | 7555 |

1444 7590 09/24/2014

Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 1100
Washington, DC 20006

# ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Carmeli ADAHAN, Jerusalem, ISRAEL;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.



Solvetum-Exhibit 1002-0380

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PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

# ELECTRONIC ACKNOWLEDGEMENT RECEIPT

| APPLICATION # | RECEIPT DATE / TIME | ATTORNEY DOCKET # |
|---|---|---|
| **13/917,865** | **06/26/2023 01:28:05 PM ET** | **ADAHAN16A** |

## Title of Invention

WOUND CLOSURE AND DRAINAGE SYSTEM

## Application Information

| | | | |
|---|---|---|---|
| APPLICATION TYPE | Utility - Nonprovisional Application under 35 USC 111(a) | PATENT # | 8858534 |
| CONFIRMATION # | 7555 | FILED BY | Madeline Nguyen |
| PATENT CENTER # | 62335841 | FILING DATE | 06/14/2013 |
| CUSTOMER # | 1444 | FIRST NAMED INVENTOR | Carmeli ADAHAN |
| CORRESPONDENCE ADDRESS | - | AUTHORIZED BY | Erik Lund |

## Documents

**TOTAL DOCUMENTS: 2**

| DOCUMENT | PAGES | DESCRIPTION | SIZE (KB) |
|---|---|---|---|
| MEAC_ENGINEERING_LTD_POA.pdf | 1 | Power of Attorney | 179 KB |
| Warning: The attached file contains comments or annotations. Comments are not recommended and may cause processing problems with the document. | | | |
| Statement_under_37_CFR_3_73.pdf | 3 | Assignee showing of ownership per 37 CFR 3.73 | 301 KB |

## Digest

| DOCUMENT | MESSAGE DIGEST(SHA-512) |
|---|---|

| | |
|---|---|
| MEAC_ENGINEERING_LTD_POA.pdf | A64420602ADB9B2ABDD98D7840E5A85CE7B33CDF1DE562D2C4AE2CAFD5EBCE2A9C01873AB255817338BF75E4BD23CFDD04F52AB0580BC05ABA386AB1D5BCDA95 |
| Statement_under_37_CFR_373.pdf | A57365A83A0813014BB6FD2C76424CE7606FCA4FDD52AB3C4C935400DA0BF1B127192C3535788D8E7AE1D74FD39497B41C770C4F843A1A1E37163D21599DFC21 |

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: M.E.A.C. ENGINEERING LTD.

Application No./Patent No.: 13/917,865 - 8,858,534 Filed/Issue Date: 06/14/2013 - 10/14/2014

Titled: WOUND CLOSURE AND DRAINAGE SYSTEM

M.E.A.C. ENGINEERING LTD., a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: ADAHAN, CARMEL To: M.E.A.C. ENGINEERING LTD.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 040196, Frame 0564, or for which a copy thereof is attached.

2. From: ADAHAN, CARMELI To: M.E.A.C. ENGINEERING LTD.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 040555, Frame 0928, or for which a copy thereof is attached.



This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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## STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

| | |
|---|---|
| /Erik N. Lund/ | 06-26-2023 |
| Signature | Date |
| Erik N. Lund | 77,473 |
| Printed or Typed Name | Title or Registration Number |

# Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

# POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in the attached transmittal letter.

I hereby appoint:

☒ Practitioners associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

**191043**

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

☒ The address associated with the above-mentioned Customer Number.

I am the:

☐ Applicant.

☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign and am authorized to act on behalf of all assignees.

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor.

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (*e.g.*, a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document).

**SIGNATURE of Applicant for Patent**

Signature: _____ Date: _____

Name (printed): Carmeli Adahan

Telephone: 972-50-6406-000

Title and Company: M.E.A.C. ENGINEERING LTD.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A |

**CONFIRMATION NO. 7555**

191043
Whitestone Law, PLLC
11718 Bowman Green Dr., Suite 200
Reston, VA 20190

**POA ACCEPTANCE LETTER**

*OC000000058748617*

Date Mailed: 06/28/2023

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/26/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/tawashington/



Solvetum-Exhibit 1002-0387

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A |

**CONFIRMATION NO. 7555**

**POWER OF ATTORNEY NOTICE**

*OC000000058748577*

1444
Browdy and Neimark, PLLC
1625 K Street, N.W.
Suite 550
Washington, DC 20006

Date Mailed: 06/28/2023

## NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/26/2023.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/tawashington/



Solvetum-Exhibit 1002-0388

TO: elund@whitestone.law,astewart@whitestone.law,info@whitestone.law
FROM: noreply@uspto.gov
CC: patentcenter_eofficeaction@uspto.gov
SUBJECT: USPTO: Patent Electronic System - Correspondence Notification for Customer Number 191043

Wed Jun 28 08:33:18 EDT 2023

Dear Patent Center Customer:

Correspondence Address:

Whitestone Law, PLLC
11718 Bowman Green Dr., Suite 200
Reston,VIRGINIA,20190
UNITED STATES

This is a courtesy notification regarding the following USPTO patent application(s) associated with your Customer Number, 191043, that have new outgoing correspondence. This correspondence is now available for viewing in Patent Center.

The official date of notification of the outgoing correspondence will be indicated on the form (e.g., PTOL-90) accompanying the correspondence.

Disclaimer:
The list of documents shown below are provided as a courtesy and is not part of the official file wrapper. The content of the images shown in the Image File Wrapper is the official record.

| Application | Document | Mailroom Date | Attorney Docket No. |
|---|---|---|---|
| 13917865 | N570 | 06/28/2023 | ADAHAN16A |
| 13917865 | N570 | 06/28/2023 | ADAHAN16A |

To view your correspondence online, please sign in to Patent Center and then select Workbench/View correspondence. To update your email address(es), select Manage/Manage customer numbers.

If you have any questions, please contact the Patent Electronic Business Center (EBC) at ebc@uspto.gov or 866-217-9197 Monday – Friday, 6 a.m. to midnight ET.

Please do not reply to this email as it was sent from an unmonitored mailbox.

Sincerely,

The Patent Center Team

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

# ACKNOWLEDGEMENT OF LOSS OF ENTITLEMENT TO ENTITY STATUS DISCOUNT

| APPLICATION # | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTORNEY DOCKET # | REQUEST ID |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 91888 |

The entity status change request below filed through Patent Center on 07/06/2023 has been accepted.

## Certifications

APPLICANT CHANGING TO REGULAR UNDISCOUNTED FEE STATUS

## Signature

I certify, in accordance with 37 CFR 1.4(d)(4), that I am one of the signatories making the entity status change.

| Signature | Name | Registration # |
|---|---|---|
| /Erik N. Lund/ | Erik Lund | 77473 |

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| In re Application of | |
| Carmeli ADAHAN | Art Unit: 3761 |
| Application No.: 13/917,865 | Examiner: Ilya Y. TREYGER |
| Filing Date: 06/14/2013 | Atty. Ref. No.: ADAHAN16A |
| Title: WOUND CLOSURE AND DRAINAGE SYSTEM | Confirmation No.: 7555 |

**PETITION FOR ACCEPTANCE OF MAINTENANCE FEE BALANCE DUE TO CHANGE IN ENTITY STATUS UNDER 37 C.F.R. § 1.28(c)**

**Mail Stop Petition**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Assignee/Applicant's assertion that Assignee/Applicant is a large entity via the Private PAIR Administration was accepted on July 6, 2023 for the above referenced patent. Assignee/Applicant asserts that small entity status was previously established in good faith, and the Office was not notified of a loss of entitlement to small entity status through error. See 37 CFR 1.28(c).

Assignee/Applicant respectfully requests acceptance of the payment of $3,080 as a deficiency payment as required by 37 CFR 1.28(c)(2). Assignee/Applicant's **Fee Deficiency Payment Itemization** begins at page 2 of this paper.

Respectfully submitted,
WHITESTONE LAW, PLLC

By: /Erik N. Lund/
Erik N. Lund
Registration No. 77,473

**U.S.P.T.O. Customer Number 191043**
WHITESTONE LAW, PLLC
11718 Bowman Green Dr, STE 200
Reston, VA 20190
703.261.9084 (direct)
703.261.9101 (main)
Deposit Account 60-4958

**Date: July 6, 2023**

## NOTIFICATION OF LOSS OF ENTITY STATUS



| Application or Patent No.: 8,858,534 | First Named Inventor: Carmeli ADAHAN |
|---|---|
| Filing Date: 06/14/2013 | Title of Invention: WOUND CLOSURE AND DRAINAGE SYSTEM |

Applicant or patentee hereby notifies the Office that micro entity status is no longer appropriate in this application or patent. Applicant or patentee asserts that:

☐ Applicant/patentee is entitled to small entity status for this application or patent. See 37 CFR 1.27.

**OR**

☑ Applicant/patentee will pay undiscounted fees in this application or patent.

This form must be signed (see bottom of page 2). If you owe a fee deficiency, you must also complete the following "Fee Deficiency Payment" section and enclose payment for the full amount of the deficiency.

## FEE DEFICIENCY PAYMENT

**(please complete this section if you are correcting prior payments that were erroneously made in the micro entity amount)**

☑ Applicant or patentee asserts that micro entity status was previously established in good faith, and that micro entity status either was established in error, or the Office was not notified of a loss of entitlement to micro entity status through error.

| Fee Description or Type | Current Fee Amount✧ | Amount Previously Paid | Date Previously Paid | Deficiency Owed |
|---|---|---|---|---|
| 3.5 yr. Maintenance Fee | $2,000 | $800 | 04/16/2018 | $1,200 |
| 7.5 yr. Maintenance Fee | $3,760 | $1,880 | 03/30/2022 | $1,880 |
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| | **Total Deficiency Owed (*sum of all entries in "Deficiency Owed" column*)** | | | $3,080 |

✧ The "current fee amount" refers to the small entity or undiscounted rate (whichever is applicable) listed on the fee schedule as currently in force at the time this paper is submitted and the deficiency is paid in full. The USPTO fee schedule is available at https://www.uspto.gov/Fees. For more information about submitting fee deficiencies, see MPEP 509.04(f). The MPEP is available at https://www.uspto.gov/MPEP.

## NOTIFICATION OF LOSS OF ENTITY STATUS



## FEE DEFICIENCY PAYMENT (CONT.)

If you owe a fee deficiency, you must enclose payment for the total fee deficiency amount for prior payments erroneously made in the micro entity amount in this application or patent. Do NOT combine payment for multiple applications or patents. If you owe a fee deficiency in multiple applications or patents, you must submit a separate form and payment for each application or patent.

Please check the applicable box for the form of payment, and follow the corresponding instructions for submitting your form and payment.

☐ A check or U.S. Postal Service money order is enclosed. Please make payable to "Director of the USPTO", and mail this form with the check or money order to:

Mail Stop Petition
Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

☐ Payment by credit card. Do NOT provide credit card information on this form. Instead, enclose a completed Credit Card Payment Form (Form PTO-2038), which is available at https://www.uspto.gov/sites/default/files/documents/PTO-2038.pdf. Submit both forms either by facsimile to (571) 273-8300, or by mail to the address shown above.

☑ The Director is hereby authorized to charge $ 3,080 to USPTO Deposit Account No. 60-4958. If you select this option, this form must be signed by someone who is an authorized user of the deposit account, and who is permitted to sign in accordance with 37 CFR 1.33. If you are paying by deposit account, you may submit this form via the USPTO's patent electronic filing systems (EFS-Web or Patent Center), by facsimile to (571) 273-8300, or by mail to the address shown above.

For more information on accepted payment methods, please see https://www.uspto.gov/learning-and-resources/fees-and-payment/accepted-payment-methods. Payment must be made in U.S. dollars, and if payment is made from a foreign country, the payment must be payable and immediately negotiable in the United States for the full amount of the fee required.

## SIGNATURE

This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.

If applicant or patentee is a juristic entity (e.g., an LLC or corporation), this form must be signed by a registered practitioner. See 37 CFR 1.31.

If applicant or patentee is a person or persons, this form may be signed by either a registered practitioner, or the applicant or patentee. Note that if multiple people together are the applicant or patentee (e.g., there are joint inventors who together are the applicant), then a signature is required from each person who is an applicant or patentee. *Submit multiple forms if more than one signature is required, see below*.*

| Signature | Date |
|---|---|
| /Erik N. Lund/ | 07-06-23 |
| Name (Print/Typed) | Practitioner Registration Number (if applicable) |
| Erik N. Lund | 77,473 |

☐ * Total of _____ forms are submitted.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

# ELECTRONIC ACKNOWLEDGEMENT RECEIPT

| APPLICATION # | RECEIPT DATE / TIME | ATTORNEY DOCKET # |
|---|---|---|
| **13/917,865** | **07/25/2023 11:29:34 PM ET** | **ADAHAN16A** |

## Title of Invention

WOUND CLOSURE AND DRAINAGE SYSTEM

## Application Information

| | | | |
|---|---|---|---|
| APPLICATION TYPE | Utility - Nonprovisional Application under 35 USC 111(a) | PATENT # | 8858534 |
| CONFIRMATION # | 7555 | FILED BY | Erik Lund |
| PATENT CENTER # | 62504492 | FILING DATE | 06/14/2013 |
| CUSTOMER # | 191043 | FIRST NAMED INVENTOR | Carmeli ADAHAN |
| CORRESPONDENCE ADDRESS | - | AUTHORIZED BY | - |

## Documents

**TOTAL DOCUMENTS: 1**

| DOCUMENT | PAGES | DESCRIPTION | SIZE (KB) |
|---|---|---|---|
| Petition_deficency_payment.pdf | 3 | Petition for review by the Office of Petitions | 258 KB |

## Digest

| DOCUMENT | MESSAGE DIGEST(SHA-512) |
|---|---|
| Petition_deficency_payment.pdf | 3550262B83A7907504F5F179403FEF03ADC5C3820267DC53E5ECF3615E15B441AE628BD1BF083B53B7F92066C5907E926FB2240D84D96F2DC17DEB7DE9F07D4B |

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized

Solvetum-Exhibit 1002-0394

by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
**United States Patent and Trademark Office**
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/917,865 | 06/14/2013 | Carmeli ADAHAN | ADAHAN16A | 7555 |

191043 7590 10/04/2023

Whitestone Law, PLLC
1850 Towers Crescent Plaza, Suite 550
Tysons, VA 22182

| EXAMINER | |
|---|---|
| TREYGER, ILYA Y | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3761 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 10/04/2023 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

astewart@whitestone.law
elund@whitestone.law
info@whitestone.law



Solvetum-Exhibit 1002-0396

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

| | | |
|---|---|---|
| In re Patent No. 8,858,534 | : | |
| Issue Date: October 14, 2014 | : | NOTICE |
| Application No. 13/917,865 | : | |
| Filed: June 14, 2013 | : | |
| Attorney Docket No. ADAHAN16A | : | |

This is a Notice regarding the request for acceptance of a fee deficiency submission under 37 CFR 1.28(c) filed July 25, 2023.

The Office no longer investigates or rejects original or reissue applications under 37 CFR 1.56. 1098 Off. Gaz. Pat. Office 502 (January 3, 1989). Therefore, nothing in this Notice is intended to imply that an investigation was done.

The fee deficiency submission under 37 CFR 1.28(c) is **ACCEPTED**. Accordingly, status as a small entity has been removed and any future fee(s) submitted must be paid at the undiscounted rate.

Since the address in the present request differs from the correspondence address of record, a courtesy copy of this Notice is being mailed to the address given in the request. However, applicant should note that a change in the correspondence address will not affect the fee address. Therefore, if applicant desires to receive future correspondence which **may** be mailed, regarding maintenance fees, for the above-identified patent, a "Fee Address Indication" form and/or a "Request for Customer Number" form(s) should be submitted (See USPTO form numbers PTO/SB/47 and/or PTO/SB/125).

Inquiries related to this communication should be directed to Jamice Brantley at (571) 272-3814.

*/JAMICE T BRANTLEY/*
Jamice T Brantley
Paralegal Specialist, Office of Petitions

Cc: Erik N. Lund
Whitestone Law, PLLC
11718 Bowman Green Dr., Suite 200
Reston, VA 20190

| Transmittal Communication on Petition | Application/Control No. 13/917,865 | Applicant(s)/Patent Under Reexamination ADAHAN, Carmeli | |
|---|---|---|---|
| | Deciding Official TREYGER, ILYA Y | Office of Petitions OPET | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --*

(ADDITIONAL PARTY'S CORRESPONDENCE ADDRESS)

Erik N. Lund
Whitestone Law, PLLC
11718 Bowman Green Dr., Suite 200
Reston, VA 20190

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified Application/Patent.

TO: astewart@whitestone.law,info@whitestone.law,elund@whitestone.law
FROM: noreply@uspto.gov
CC: patentcenter_eofficeaction@uspto.gov
SUBJECT: USPTO: Patent Electronic System - Correspondence Notification for Customer Number 191043

Wed Oct 04 05:02:20 EDT 2023

Dear Patent Center Customer:

Correspondence Address:

Whitestone Law, PLLC
1850 Towers Crescent Plaza, Suite 550
Tysons,VIRGINIA,22182
UNITED STATES

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| Application | Document | Mailroom Date | Attorney Docket No. |
|---|---|---|---|
| 13917865 | PETDEC | 10/04/2023 | ADAHAN16A |

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If you have any questions, please contact the Patent Electronic Business Center (EBC) at ebc@uspto.gov or 866-217-9197 Monday – Friday, 6 a.m. to midnight ET.

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Sincerely,

The Patent Center Team